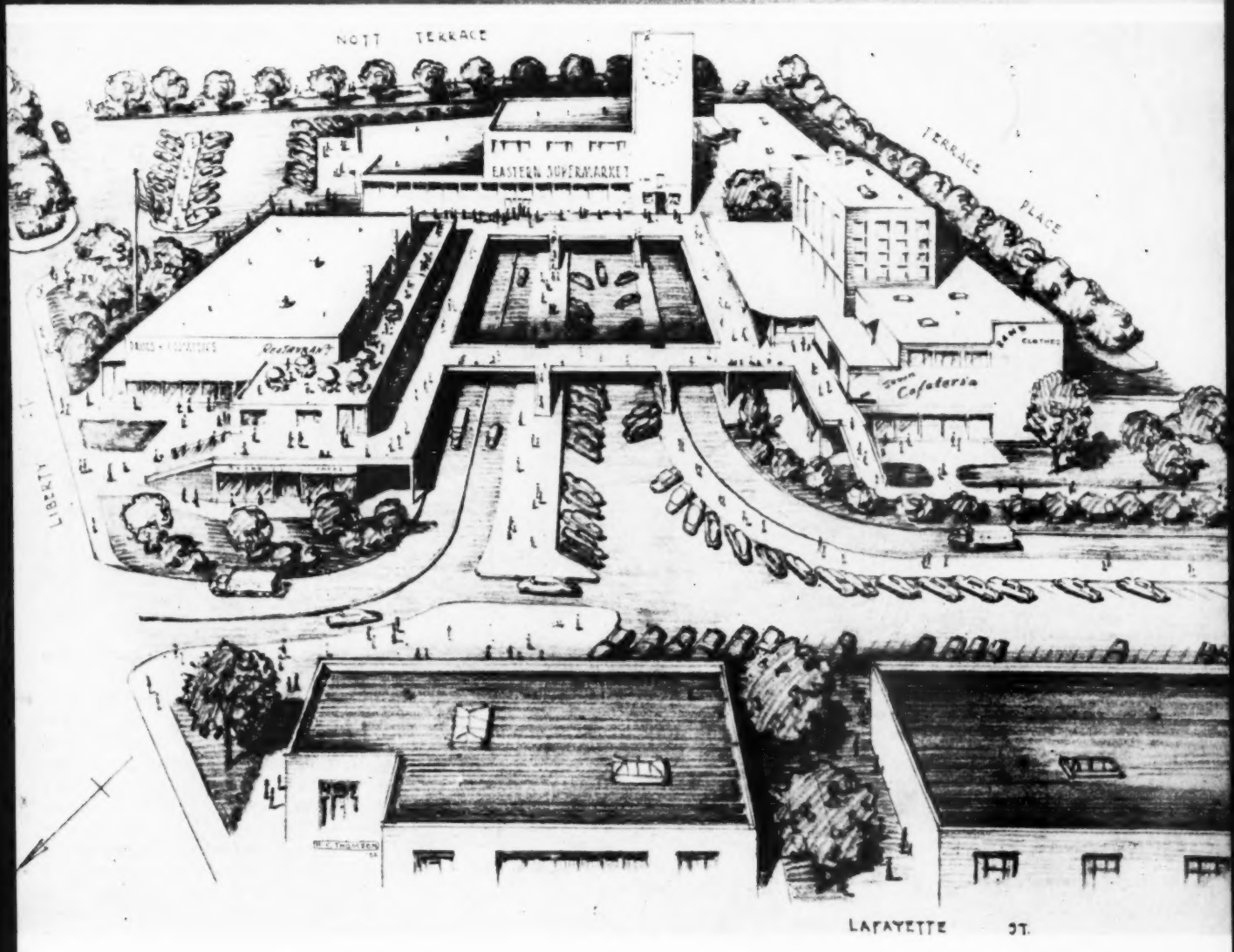
JANUARY 1953

The American City



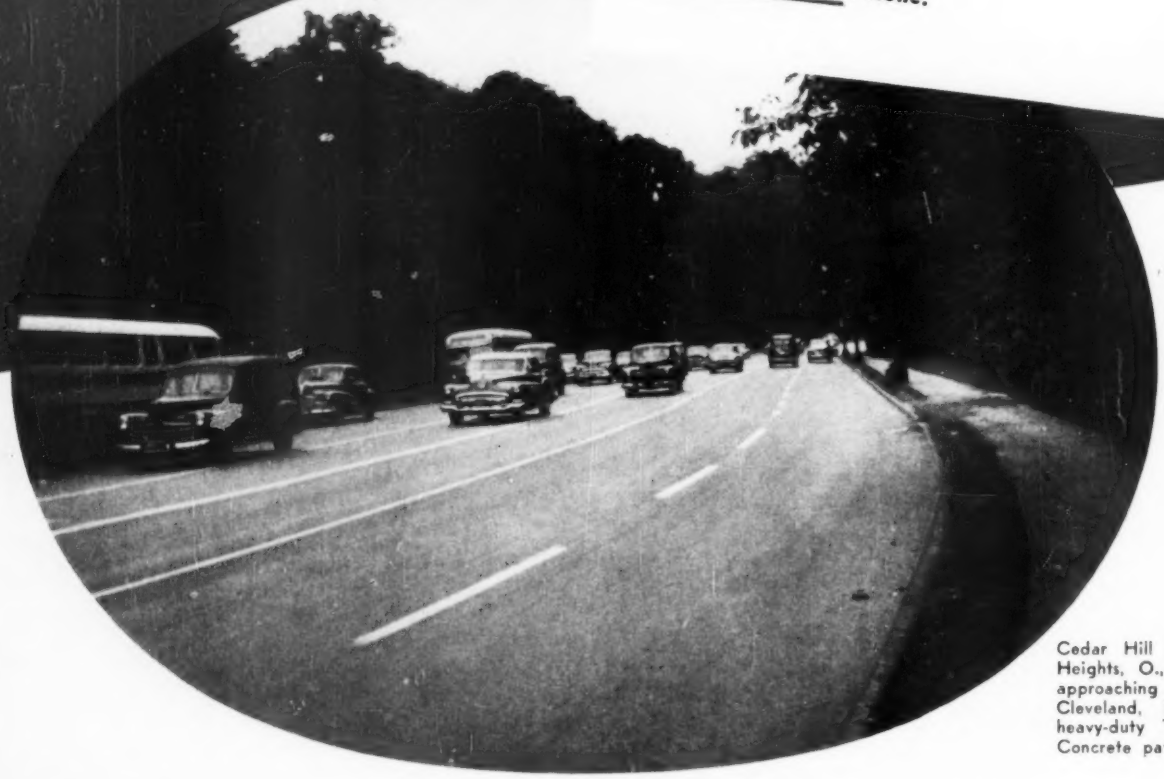
A PROPOSAL for transforming a seven-acre slum area in downtown Schenectady into a shopping and business center with ample parking facilities and with separation of pedestrians and vehicular traffic, made to the local Housing Authority by the New York State Division of Housing. (See page 127.)

A pavement that can take it

TRAFFIC: Averages more than 20,000 vehicles a day.

AGE OF PAVEMENT: 10 years

UPKEEP TO DATE: None.



Cedar Hill Road, Cleveland Heights, O., used by traffic approaching and leaving Cleveland, has a resilient, heavy-duty Texaco Asphaltic Concrete pavement.

Photo taken in 1943 shows Texaco Asphaltic Concrete being laid by Cuyahoga Asphalt and Paving Company of Cleveland.

Ten years of 20,000-vehicle-a-day traffic provides a real test of a pavement's durability and upkeep cost. The hot-mix Texaco Asphaltic Concrete pavement on Cedar Hill Road in Cleveland Heights, O., has been subjected to such a test since 1943. Day in and day out, this thoroughfare serves a steady flow of traffic to and from the neighboring City of Cleveland.

Not only has the pavement successfully withstood the punishing impact to which it has been subjected, but it has required no maintenance. Besides the saving in taxpayers' dollars, absence of repair gangs from the street has meant that motorists have experienced no inconvenience from this cause.

Texaco Asphaltic Concrete's durability and low upkeep cost are explained by its shock-absorbing resilience, low susceptibility to temperature variations, its freedom from joints and the fact that it is waterproof.

Best evidence that Texaco-paved streets have won the approval of city officials is that more than 1500 representative cities across the country have paved with Texaco Asphalt during the past half-century.

Two helpful booklets on all types of Asphalt construction for city streets can be obtained by writing our nearest office.

THE TEXAS COMPANY, Asphalt Sales Dept., 135 E. 42nd Street, New York City 17
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TEXACO

TEXACO ASPHALT

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HAROLD S. BUTTENHEIM, Editor
ALDEN W. WELCH, Research Editor
WILLIAM S. FOSTER, Engineering Editor
CARL ERIC CARLSON, Associate Editor
CAROL W. HIGHTOWER, Production Editor

EDGAR J. BUTTENHEIM, President
GEORGE S. CONOVER, Vice-President
EDWIN WAGNER, Treasurer
DONALD V. BUTTENHEIM, Asst. to President

HEADQUARTERS
470 Fourth Ave., New York 16, N. Y.
Myron MacLeod, Advertising Manager
Edgar M. Buttenheim, Business Manager
Edward George Allen, Jr., Promotion Manager
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BRANCH OFFICES
1719 Daily News Building, Chicago 6
George S. Conover, Warner H. Robinson
Arthur B. Bargan

420 Leader Building, Cleveland 14
Robert C. Burton

2238 Ben Lomond Drive, Los Angeles 27
Albert T. Miller, *Pacific Coast Manager*

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THE MUNICIPAL INDEX and ATLAS (over 900 pages), published annually by the American City Magazine Corporation, when used with the current advertisements in THE AMERICAN CITY, provides officials with the latest information on all types of municipal equipment and supplies.

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WELCOME HOME, SERGEANT!

A Telephone Family in Chicago. *Sergeant Donald McIntyre got a real family welcome from his sister, Mary, a Service Representative; his mother, who was an Operator for seven years; and his brother, Angus, a Plant Assigner. Sergeant McIntyre's father was also a telephone man.*

Sergeant Donald McIntyre, former telephone installer, returned home from Korea a few months ago. He served with the 1st Marine Division and was twice awarded the Purple Heart.

He was welcomed back to his telephone job, of course. But in a certain sense he had never been away. For his new pay check reflected the increases he would have received on his old job if he had not joined the Marines.

There are some 16,000 other Bell Telephone men and women now in the service who will receive a similar warm welcome on their return home.

BELL TELEPHONE SYSTEM ..."A GOOD PLACE TO WORK"

Refuse Collection & Disposal

Applied Municipal Geometry Pays Off

FOLLOWING an on-the-route study and then the use of a draftsman's compass, Tucson, Ariz., is now saving $30,000 annually in the cost of its refuse-collection operation.

Prior to May of this year, the city was sharing a dump for refuse disposal with the county. City Manager Don P. Wolfer rode all the city collection routes with the sanitation supervisor, noting the mileage covered to and from the existing dump. Then he put a compass on the center of the city map and circumscribed all the municipally owned land sites which were nearer than the county dumping grounds. One was located which, with the landfill method, could handle the municipal refuse tonnage and more for the next five years. As a result, mileage covered by the Tucson sanitation trucks has been cut 17%. Further refinement of the collection system by inaugurating night pickups when traffic is lighter meant an additional saving in manpower and equipment. Consolidation of trash and garbage pickups resulted in a 14% reduction in the number of trips necessary per month.

When the new landfill is exhausted it will help to improve the looks and value of the property in the area by bringing a large portion of it up to grade.

One of Tucson's six new GMC trucks, carrying Gar Wood Load Packer bodies, delivers a load of refuse to the city's new sanitary landfill. One of the two International TD Bulldozers stands by to compact the refuse and cover it with the earth shown in the background.

Seventy-eight tons of refuse and not a scrap showing. Tucson's sanitary fill, within easy hauling distance of the city, will last for another five years.

Toledo Uses Zone Collection

TO REMOVE the solid wastes from approximately 87,000 residences in Toledo, the Refuse Collection Superintendent, under the supervision of the Assistant Commissioner, has divided the city into five zones with five units and a foreman in each zone. Each unit consists of two truck drivers, one driving a garbage-collection truck and one a rubbish-collection truck. Each truck has three collectors. The city has a total of 57 trucks, each with a closed, compactor-type body, the volume of which varies from 13 to 15 yards.

In all cases, the collectors must pick up the containers from their location in the residence yard and return the empty cans to the same location. Approximately 225 men are employed in this section. These men cover 125 scheduled routes. Approximately 46% of the stops in the city are alley collection points. The rest are "carry-outs."

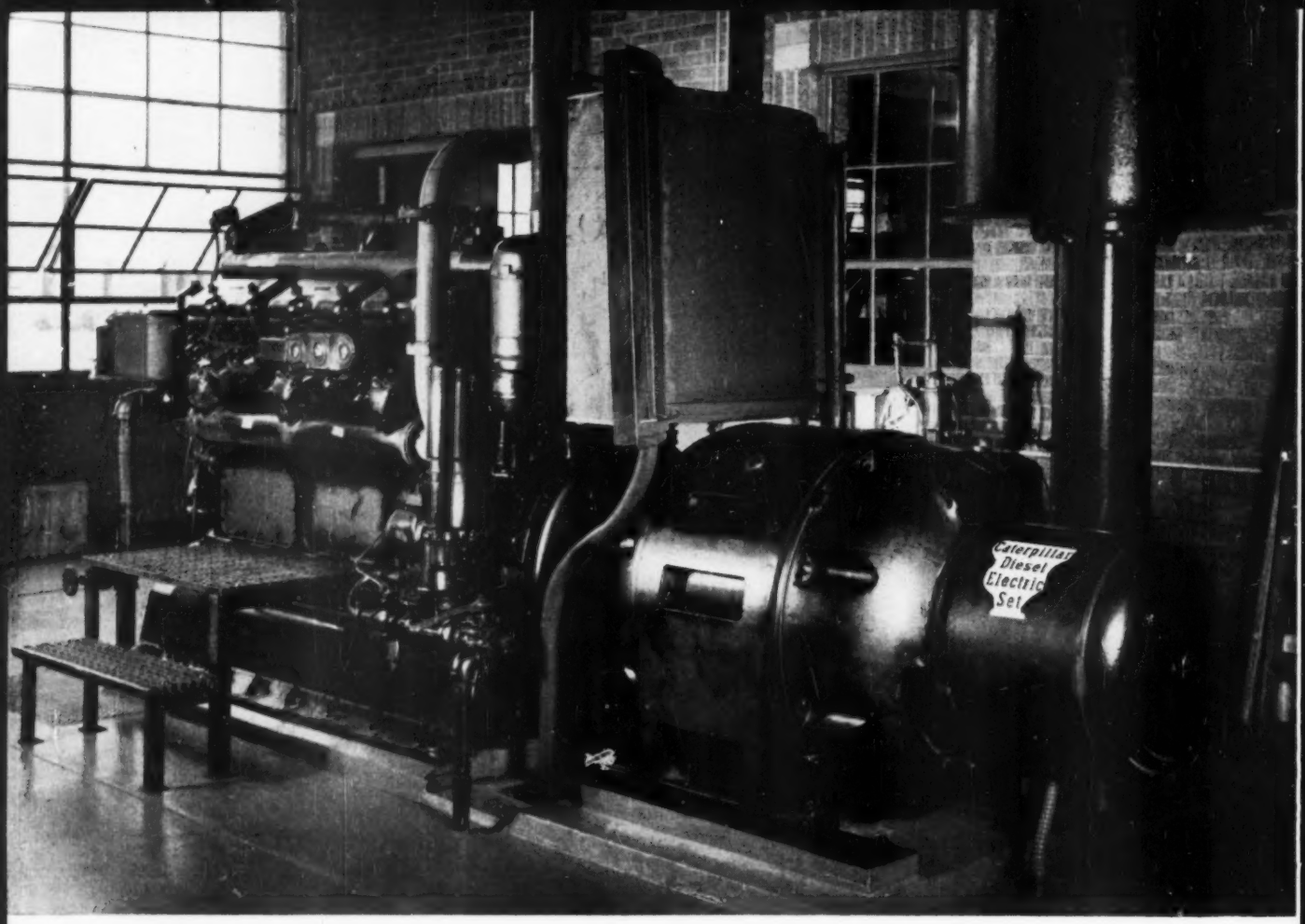
These crews work on a task system. Each crew is responsible for the collection of all garbage and rubbish on its daily route. If the work is accomplished in less than eight hours, the men are entitled to quit for the day. Each crew averages 335 stops per day.

The cost to the city averages 19.3 cents per stop per week for both rubbish and garbage combined. Collections average 1.7 cubic yards of combined refuse per month. The trucks average 13¼ cubic yards per load. The costs average $24.81 per load; $1.87 per cubic yard; and $3.17 per capita per month.

To Improve Apartment-House Incinerators

TWO BASIC PROBLEMS exist in connection with smoke nuisances arising from the operation of apartment-house incinerators, according to Harry C. Ballman, Smoke Regulation Engineer of Columbus, Ohio. The first is the nuisance of old, improperly designed incinerators in apartment houses and in such general commercial establishments such as restaurants and garages. Most of these units are over five years old, and in many cases are basically home-made jobs which never were meant for the purpose for which they are used. In the case of apartment houses, it is the old story of an improperly designed flue-fed incinerator not being able to handle the general mixed refuse which is fed into it.

Another more easily corrected problem is the continued installation of domestic incinerators without the necessary inspection by the Division of Smoke Regulation and Inspection. Such installations, without close tabulation and inspection, cause the present sad circumstances to continue without abatement. It is only by being able to assure ourselves that all new installations are proper that we can ever hope to overcome and improve our present situation.



Standby for emergency in Blooming Prairie

The tidy village of Blooming Prairie in the heart of farm-rich southwestern Minnesota may be small as cities are reckoned—but it's big in the way it protects its 1,500 citizens. It uses a dependable, easy-starting Caterpillar D397 Electric Set to overcome the menace of power-blackouts.

Blooming Prairie's municipal power plant puts out an average of 1,200 KW to light 350 homes and its streets, and to provide power for a soybean plant, creamery, mill, churches and other public buildings. J. E. Mack, superintendent of the power plant, explains why the village no longer fears blackouts:

"We've had to use our D397 for emergencies. It ran continuously for a long while giving efficient, trouble-proof service. It's very economical on fuel. We use it for standby and also during those periods when demand becomes heavy during the dark winter months."

There's also hard-headed business logic in investing municipal funds for Cat multiple Electric Sets instead of a single large unit. When a large unit breaks down, a complete blackout results. Not so with a multiple-unit setup. Too, multiple sets can be matched to the load to offer fuel savings and to reduce engine wear. And Caterpillar Electric Sets operate on low-cost No. 2 furnace oil. You have a complete selection up to 315 KW.

Your Caterpillar Dealer can show you the electric sets that fit your needs. They're money-saving investments in these inflationary days.

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CATERPILLAR

REG. U. S. PAT. OFF.

Diesel Engines
Electric Sets

Our Municipal Notebook

NPA Announces Easing Of 1953 Building Curbs

THE National Production Authority has announced a broad relaxation of controls on construction beginning January 1, allowing builders to self-authorize allotments of steel and copper sufficient to meet normal requirements for multi-residence (walk-up) buildings and multi-unit, elevator-type apartments.

The easier regulations will permit the building of average-size schoolhouses, hospitals, and other public projects, with large-scale projects still requiring special permission from the NPA. The NPA will also now allow the construction of recreational buildings, including such structures as dance halls, and other amusement enterprises that heretofore had required individual sanction.

Approval of greater use of aluminum has been held up until May 1.

Thomas H. Reed and Thomas R. Reid

AT THE recently held Conference of the National Municipal League, outstanding addresses on citizen action were made by two civic leaders of somewhat similar name, but with different approaches to the same objective. These were Thomas H. Reed, nationally known municipal consultant, and Thomas R. Reid, Director of the Office of Civic Affairs, Ford Motor Company. Excerpts from these two addresses will be found on pages 149 and 91 of this issue of THE AMERICAN CITY. (*See also* page 169.)

School Interest Increases In Community Improvement Projects

THE FIRST large-scale national roundup of detailed reports on how the public schools of America are contributing to the improvement of their communities is published in a special January issue of *The School Executive*, national professional journal in the educational field. Reports of activities from 400 key communities in every state are presented with 62 case histories detailing the school–community relationship.

Dr. Walter D. Cocking, editor, reports a few tentative conclusions reached as a result of the survey:

"First, it seems apparent that there is an increasing sensitiveness on the part of schools that they play a part in community improvement. Fifty-six per cent of the systems responding to our questionnaire stated that they were experiencing some sort of community-improvement program.

"Second, two distinct points of view on the best way to achieve community improvement appear. These are:

(1) using the community to improve the school with community improvement a subsidiary consideration; and

(2) using the basic resources of the school to improve the community directly."

The School Executive is published monthly at 470 Fourth Ave., New York 16, N. Y.

U. S. Civil Defense Council Organized

AT A "CRITICAL TARGET CONFERENCE" held in Columbus, Ohio, November 19-21, a new national organization was formed to collect, evaluate, and disseminate the common experience and collective judgment of specialists trained in and responsible for the civil-defense activities of our target areas.

This organization, to be known as U. S. Civil Defense Council, elected as its president George F. Arnold, Administrator, Department of Civil Defense, Columbus and Franklin County, Ohio. Sam Wilson, Civil Defense Department, Cuyahoga County (City Hall, Cleveland, Ohio) was elected secretary, and Colonel John E. Pokorny, Dearborn, Mich., legal counsel.

At the invitation of General C. O. Thrasher, of Kansas City, Mo., the next conference will be held in that city the first week in June 1953.

Featured at the Columbus meeting were exhibits of electronic equipment, public warning devices, rescue equipment, and warning equipment by lease lines.

Successful Queensview Project Leads to 312-Unit Extension

IN 1948 a group of New Yorkers sponsored Queensview, a cooperative housing project in Astoria for families of moderate income. Gerard Swope was chairman of the board, Louis Pink was president, and Howard Sheperd was treasurer. The founders established a revolving fund (which was repaid in 1950) to cover initial expenditures. Land acquisition and a limitation on real estate taxes were made possible under the Redevelopment Companies law; mortgage financing was provided by the Mutual Life Insurance Company; equity funds were supplied by purchasers of the apartments.

The first of Queensview's 728 families moved into their new homes on November 15, 1950. Monthly carrying charges were about $18 per room—average equity investment was $600 per room.

And now, four years later, Messrs. Pink, Swope, and Sheperd are again spearheading the sponsorship of Queensview North, a sister project which will contain 312 apartments. Conventional mortgage financing has been arranged through the Bowery Savings Bank. The pattern of equity

The American City Quiz

Match Wits with the Experts

QUESTIONS

1. *How many catch-basins should a crew be able to clean in a year if it uses a dump truck carrying an "orange-peel" bucket?*
2. *Is there any method of reducing the volume of sludge collected in a sewage-treatment plant, other than by digestion or incineration?*
3. *Can phenol be removed from water or sewage by chlorination?*
4. *Are there criteria of quality by which the condition of streams can be rated in terms of water use?*
5. *What other way can a city call volunteer firemen except by sirens?*
6. *Can homes served by septic tanks use kitchen garbage grinders without difficulty?*
7. *Is trichinosis resulting from garbage-fed hogs increasing or decreasing?*
8. *When does an aeroplane exert its greatest load on an airport runway?*
9. *What is a good method of eliminating the psychoda fly, which breeds in trickling filters?*
10. *When using a rubber admixture in building asphalt streets, can natural, synthetic, and processed rubber be used interchangeably?*

(Answers on page 11)

"Dressing The Diver," lithographed on stone for U.S. Pipe and Foundry Co. by John A. Noble, A.N.A.

OUR FLEXIBLE JOINT PIPE is highly regarded by water, gas and sanitation engineers for dependable service in submarine lines. For many years, it has been used in notable and difficult installations throughout the nation.

U. S. flexible joint pipe in all sizes, and pipe 30-inch and larger with other types of joints, are made by the pit cast process. Our pipe, 2-inch through 24-inch, is cast centrifugally in metal molds with bell-and-spigot, mechanical joint or plain ends. All of these types of pipe and joints are widely used for water, gas, sewerage and industrial service and are readily available to meet your requirements.

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cast iron
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FOR WATER, GAS, SEWERAGE AND INDUSTRIAL SERVICE

investment and carrying charges will remain substantially unchanged.

One of the cherished aims of the founders of Queensview was to demonstrate that cooperative housing could be sold and operated on a nondiscriminatory basis. Happily, this objective has been achieved in full measure.

Queensview North may be dwarfed by other large-scale housing projects that will arise in 1953. It cannot be acclaimed as a pilot development. But as a second effort it has great significance. The founders of Queensview, whose sole interest was to demonstrate the feasibility of the project, have proved their point. And the deep satisfaction that they and the cooperative owners have gained in the process now leads to a return engagement.

JAMES FELT

For an article on Queensview, by Louis H. Pink, see pages 106-108, THE AMERICAN CITY for April 1952.

City Planning Booklet For Local Businessmen

THE "HOW" AND "WHY" of city planning as a guide to community growth is spelled out for businessmen and civic leaders in a new publication of the Chamber of Commerce of the United States.

Prepared by a special committee of well-known professional planners, *City Planning and Urban Development* gives practical and authoritative answers to two questions frequently asked by local businessmen concerned with problems of municipal growth and adjustment in their home communities. The questions are:

What can businessmen do to promote realistic and practical city planning?

What are the mechanics of setting up and maintaining an effective city planning commission?

Answers are supplied in 47 pages of non-technical discussion bringing out what city planning is, what it can accomplish, who does it, and what special "tools" are used. Consideration is given to special aspects of planning such as decentralization, extra-territorial controls, the modern shopping center, industrial dispersion, traffic and off-street parking, public transit, and other modern developments.

City Planning and Urban Development carries on and expands the principles of community improvement presented in an earlier Chamber publication, *Zoning and Civic Development*, a practical guide to effective zoning.

Copies of either booklet are available from the Chamber of Commerce of the United States, 1615 H St., NW., Washington 6, D. C. Single copy price is 30 cents postpaid, with lower prices for quantity orders.

Zoning for Minimum House Size

IS IT sound public policy to use municipal zoning powers to specify minimum-house size?

This important question has been treated at some length by contributors in previous issues of THE AMERICAN CITY.* Though recognizing the cogency of the several points of view, this magazine's editorial position is that attempts to control minimum building sizes by zoning are apt to backfire, thus tending to lessen the painfully established stature of and respect for municipal authority in the planning and zoning field.

To Conserve the Public Interest

Municipal officials have, of course, a special obligation to see that planning and zoning powers and regulations are used in the total public interest, for sound public purposes, and not as an instrument of economic privilege.

Caught between the various pressures described in our previous articles, what course should the municipal official follow? On the one hand, the community's interest, if it is facing a wave of building development, will be to keep out the jerry-built small houses sometimes labeled as "homes" by private builders, and avoid serious attendant strains on municipal finances and other problems. But the impelling interest of many lower- and middle-income families in obtaining homes of their own —even though at first modest in size—cannot be disregarded. These basic interests may be complicated by other local and state considerations—such as exist, for example, in connection with New Jersey's much-discussed Wayne Township case—the liberality of recent New Jersey court decisions, the summer-cottage problem, testimony on public health and hygienic housing standards, etc.

As ASPO and RPA See It

Recent reports † by two highly respected organizations, the American Society of Planning Officials, with headquarters in Chicago, and the Regional Plan Association of New York, indicate the doubtful validity of minimum house standards as currently conceived and applied. Both recognize that minimum building size may be regulated where there is a clear relationship between such standards and public health, and they do not deny the importance of the square-foot standards prepared by the Committee on the Hygiene of Housing of the American Public Health Association.

But, to be consistent, both ASPO and the RPA point out, such standards must be related to occupancy, and to the number of rooms. Is a particular dwelling suitable for the number of persons who regularly inhabit it? And there are yet few communities or public officials prepared or willing to regulate the number of persons who may occupy *private* single-family dwellings, though some local housing authorities may have attempted to do so—usually with difficulty—for *public* housing projects.

Public Health Is Criterion

The Regional Plan bulletin concludes: "As the standards move away from the touchstone of public health, not only their constitutionality but their value as a practical means of control and guidance of community development become increasingly doubtful, in our opinion."

Other Tools Available to Guide Community Growth

Fortunately the municipal official has other already well-established tools that he can put to work for the results the community wants in controlling its destiny. The courts are becoming increasingly liberal in interpreting and expanding municipal authority for these other planning and zoning powers, including controls over density represented by the Floor Area Ratio concept, zoning for minimum lot size and lot width, etc.

The local official clearly, also, has the responsibility to see to it that the local zoning ordinance is in accord with a carefully developed master plan that considers sanitary and terrain conditions, the municipality's relationship to the region as a whole, and the other factors commonly incorporated into such plans. In cooperation with other municipalities of his state, he should press for adoption of well-defined state-wide housing standards, and perhaps a state-wide housing code similar to the one recently adopted in New York State. Such measures will strengthen the municipal position in controlling haphazard and flimsy building development, and not tend to weaken its administrative and legal authority, as zoning for minimum house standards may well do.

---

* "Pennsylvania Court Rules on Snob Zoning," by O'Brien Boldt. April 1950, p. 129.

"Minimum Building Size," by Norman Williams, Jr. October 1951, p. 130.

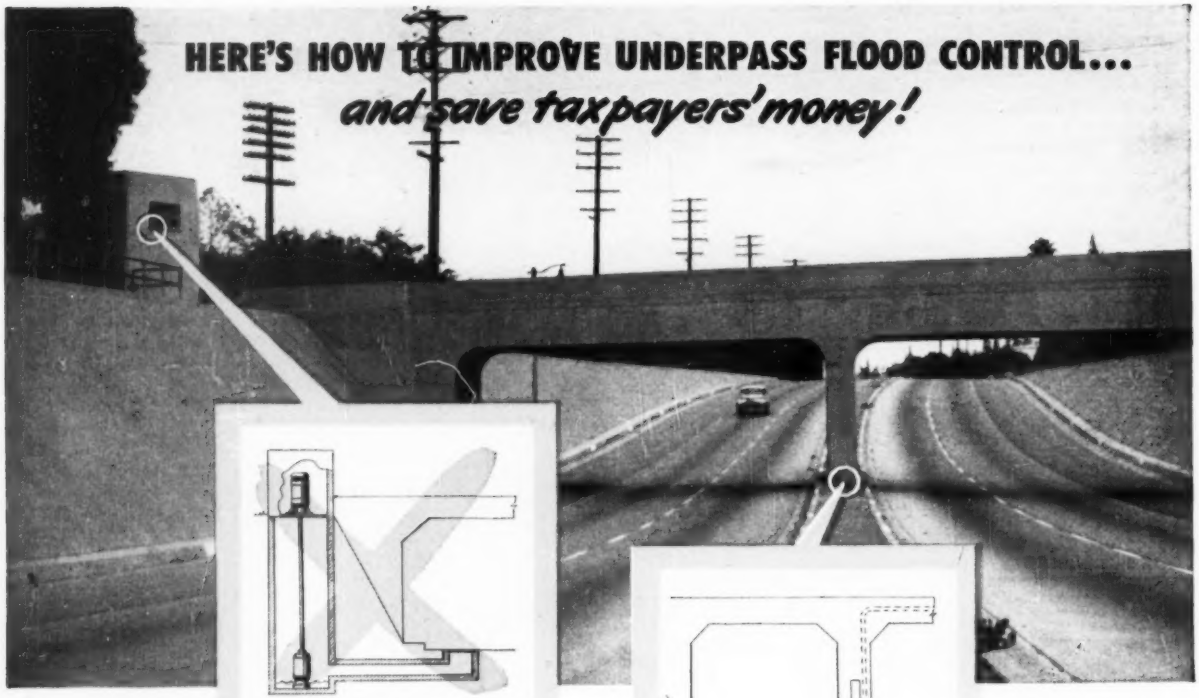
"More on Wayne Township and Minimum-Size Zoning," by Herbert H. Smith. November 1951, p. 133.

"Economic Segregation Through Minimum-Size Housing," by Norman Williams, Jr. December 1952, pp. 126-127.

† "Minimum Requirements for Lot and Building Size." Information Report No. 37, April 1952, Planning Advisory Service, American Society of Planning Officials, 1313 East 60th St., Chicago 37, Ill. (Available only to subscribers for the Service.)

"Zoning for Minimum House Size," Zoning Bulletin of the Regional Plan Association, 205 E. 42nd St., New York 17, N. Y. November 1952.

HERE'S HOW TO IMPROVE UNDERPASS FLOOD CONTROL...
and save taxpayers' money!



BJ SUBMERSIBLE PUMPS

save space, reduce installation cost, and eliminate the expensive pump house eyesore

MELTING SNOW, heavy rains, and general water drainage are big problems in underpass flood control planning. This photo shows how you can meet these troublesome flood demands with new efficiency and at far less construction cost. The old standard pump house installation (at left), expensive and unattractive, can be replaced by unseen yet easily accessible BJ Submersible Pumps. These pumps are placed in a simply-constructed pit between highway lanes. They provide all the pumping capacity you need, yet use less than 1/10th the space required by a standard pump installation.

Plan your new underpass construction with BJ Submersible Pumps. And keep these space-saving pumps in your general water supply and water control program. For full details, specifications and capacities, contact your local BJ representative or send the coupon below.

BJ PUMP DIVISION, Dept. 50

Please send me full details on the BJ Submersible, including data on actual municipal installations.

NAME_____ TITLE_____

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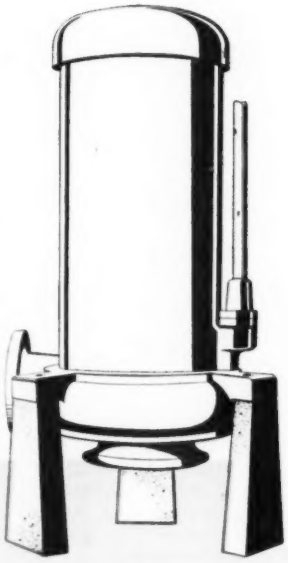
P.O. BOX 2017 TERMINAL ANNEX, LOS ANGELES 54, CALIF.
Offices in Principal Cities



BJ Underpass Submersible with 2-port non-clogging runner.

Lady Mayor Ambitious For Her Town

COLUMBIA, LA., has a woman mayor, Mrs. Gay H. Alford, who is planning a fine future for the town. In a recent letter to THE AMERICAN CITY, Mayoress Alford said:

"I want to clean up the town, repair and resurface all the streets, put in an adequate drainage system and other municipal improvements. Heading the list of improvements is the building of a new city hall, to be paid for without a bond issue. Plans are already in the making."

Columbia, the Caldwell Parish seat, is a cotton-and cattle-raising community on the Ouachita River, and it serves as the trade center for the surrounding area. Because of its fine water, rail, highway, and utility facilities, Mayoress Alford feels sure that she will be able to realize her ambition to help build a new economy for her town and parish.

Realistic Assessing and Taxing of Local Property Urged

WIDELY HEARD comments that revenue potentialities of the property tax have been fully exploited were questioned by Allen D. Manvel, Chief, Government Division, Bureau of the Census, at the recent National Municipal League Conference in San Antonio, Texas.

"Trends of the past five years discount this dogma," said Mr. Manvel; "property-tax yields have risen from about $5,000,000,000 in 1946 to nearly $8,000,000,000 in 1951. Even so, the ratio of property tax revenue to total personal income in the nation was only 3.1% in 1951 as compared with 5.5% in 1929, and 9.5% in the depression year of 1932. Despite the great increase in the nation's physical real property in the form of housing and industrial plant, and the tremendous rise in price levels during the past two decades, per capita property-tax yields have risen only from about $38 in 1932 to about $51 in 1951.

I should like to suggest that improvement of property taxation offers a major opportunity throughout the nation for demonstrating the vigor, capacity, and integrity of self-government at the state and particularly at the local level. Evidence from many quarters appears to indicate that realistic and courageous use of assessing and taxing powers even now available would both lessen present inequities and considerably increase revenues from this tax source. Certainly, state legislative action would be helpful in many respects—for example, to end impossible and widely flouted requirements for full-rate assessment and taxing of intangible personal property, and to remove or lessen incentives toward competitive underassessment of realty by various local jurisdictions. Those concerned with self-reliant government at the grass roots may well work for such legislation. But, even more, they can demonstrate their attitude by tackling right at home some of the property-tax problems, such as incomplete, unequal, and fractional assessment, which now contribute widely to the financial stringency of local governments.

EDITORIAL NOTE: See also "Large City Finances in 1951," page 7 of THE AMERICAN CITY for December 1952.

The American City Quiz

ANSWERS TO QUESTIONS ON PAGE 7

1. Roland N. Barton, Commissioner of Service, Cleveland Heights, Ohio, finds that his crews can clean 3,500 catch-basins per year using a 2½-ton White dump truck equipped with a Hayward orange-peel bucket powered by a power take-off from the truck.

2. In Pittsburgh, Pa., John Laboon, Chief Engineer of the Allegheny County Sanitary Authority, feels that there is. His plans are not to digest the sludge, but to "concentrate" it. This means holding the sludge for five days, at which time the carbon dioxide generated will lift the sludge to the top of the tank as scum, and the "subnatant" can be withdrawn, leaving a sludge with 20% solids. This then will be incinerated directly. The concentrated sludge can also be digested with a corresponding reduction in digestion-tank capacity and a corresponding reduction of supernatant liquor.

3. Chlorine can handle wastes with a phenol content of not more than 200 ppm if the volume of the waste does not exceed 100,000 gallons daily. Chlorine can handle wastes with a phenol content higher than 200 ppm if the volume is limited to a few thousand gallons daily. Phenol concentrations greater than 200 ppm should be reduced by recovery methods. The economics of the treatment both as to concentration and volume is the limiting factor in both cases, according to A. E. Griffin and N. S. Chamberlin of Wallace & Tiernan Co., Inc., Newark 1, N. J.

4. Yes, although there is no universal agreement yet on water-quality yardsticks or criteria. The Ohio River Valley Water Sanitation Commission, for example, faced with the problem of defining what constitutes satisfactory bacteriological conditions in the Ohio River, reached these conclusions: If the river water is to be used for water supply (after being processed in a filtration plant) the MPN (most probable number) of coliform organisms in the raw water should not exceed 5,000 per 100 ml in any month. Where the water is to be used for recreational purposes, the MPN should not exceed 1,000 per ml during any month of the recreational season; for non-bathing purposes the MPN should not exceed 5,000 per ml.

5. Oberlin, Ohio, alerts its volunteer firemen by means of a new FM radio receiver tuned to the frequency of the village police two-way radio system. A selective dispatching device developed by General Electric prevents the receivers from acting on police-department calls.

6. According to a government bulletin, No. 17, Housing and Home Finance Agency, they can if the tanks will be cleaned at intervals of five years. If there is no certainty of this, the tank capacities should be increased 50%. In existing systems, the tanks should be used as constructed until it is established that added volume is needed.

7. One encouraging study by Dr. Rodney R. Beard, of San Francisco, based on random autopsy samplings, indicates that it is decreasing. This is attributed to the reduction of pork from garbage-fed hogs and stricter attention to adequate processing of pork products.

8. The greatest load on an airport pavement occurs when the plane is parked and the propeller stopped. The load decreases as the propeller starts, decreases more when the plane starts to move. Impact stresses are unimportant, according to Henry Aaron, Chief, Paving and Soils Branch, Civil Aeronautics Administration.

9. T. C. Schaetzle, Senior Associate Engineer of the Akron (Ohio) Department of Water and Sewage, finds benzene hexachloride with 11% gamma isomer best for attacking the psychoda fly. He applies it at the rate of 4½ gallons per acre.

10. While this question has not been answered, Detroit is trying all three. Rubber powder amounting to 5% by weight of asphaltic cement in the case of natural and synthetic rubber, and 7½% by weight in the case of processed rubber, was added in a test started in 1951.

●

Send in suggested questions and answers on municipal topics for use in this feature. A small payment will be made by THE AMERICAN CITY for each question accepted.

HIGHWAY ENGINEERS! Get the facts now for laying a test RUBBER ROAD in 1953

RECENT RUBBER ROAD INSTALLATION at a busy intersection in Los Angeles. Standard equipment and laying methods are used in laying natural rubber-asphalt paving.

WRITE TODAY FOR INFORMATION

NATURAL RUBBER BUREAU
1631 K Street, N. W., Washington 6, D. C.

With no obligation, please send me engineering data for laying a test strip of natural rubber-asphalt pavement as follows:

1. Length of proposed test strip ..... miles
   Width of proposed test strip ..... feet
2. New Construction ☐ Resurfacing ☐

PLANT MIX	SURFACE TREATMENT
Type: Hot ☐ Cold ☐	Grade of Bitumen .....
Grade of Asphalt	Application Rate .... gals. per sq. yd.
Penetration	
Depth of Top Course ..... inches	COVER MATERIAL
Aggregate Content ..... %	Type of Aggregate .....
Aggregate Top Size ..... %	Size of Aggregate .....
Bitumen Content ..... %	Lbs. per sq. yd. .....

Name .....
Title .....
Dept. .....
Address .....
City ..... State .....

☐ Please send booklet "STRETCHING HIGHWAY DOLLARS WITH RUBBER ROADS"

☐ Please send information about new 30-minute motion picture on rubber roads

Natural Rubber Bureau Offers Technical Data and Engineering Help

With the biggest road-building year in U. S. history expected in 1953, highway engineers all over the country are making plans now to lay stretches of natural rubber-asphalt road during this paving season.

Since 1949, roads incorporating natural rubber powder have been laid in 17 states. Highway engineers are enthusiastic about results to date. Indications are that natural rubber powder, mixed with asphalt, will give longer life to roads, reduce repair costs, and stretch highway dollars.

This year, for the first time, natural rubber powder is available on a commercial scale for road-building purposes, and it is expected that the demand will be large.

Expert technical assistance is available without cost or obligation from the Natural Rubber Bureau Research Laboratory. You can obtain full information about rubber roads—tests to date, methods of laying, and sources of natural rubber powder—simply by filling out this coupon and sending it to the Natural Rubber Bureau. Our staff of experienced highway engineers will be happy to help you.

Write today to the

Natural Rubber Bureau

1631 K STREET, N. W., WASHINGTON 6, D. C.

Natural Rubber Bureau Research Laboratory
Rosslyn, Virginia

An Easy Way to Raise Manholes

The first step is to clean thoroughly the existing manhole ring. Note the adapter ring alongside.

The next step is to place the adapter ring in position and lock it securely with Allen studs.

IN KANSAS CITY, MO., the problem of raising manholes to fit the new street surface is not difficult. For the past three years, the city has been installing cast-iron rings whose width is equal to the proposed thickness of the pavement resurfacing. The ring is grooved so that it will receive the manhole cover in the same manner as does the original casting.

C. A. Moore of the Engineering Department has found that the rings, to work best, should be laid in a relatively flat section of the street. They should not be used on street sections where the crown is excessive or where the manhole has to be adjusted horizontally to fit the crown of the street after resurfacing. In the many locations where they can be used, however, they represent a substantial saving in the cost of adjusting the manholes. A steep longitudinal grade has no effect on the use of the rings.

The rings are a product of the A. Reed Wilson Company, of 1320 McGee St., Kansas City 6, Mo.

First Use of Adapter Rings

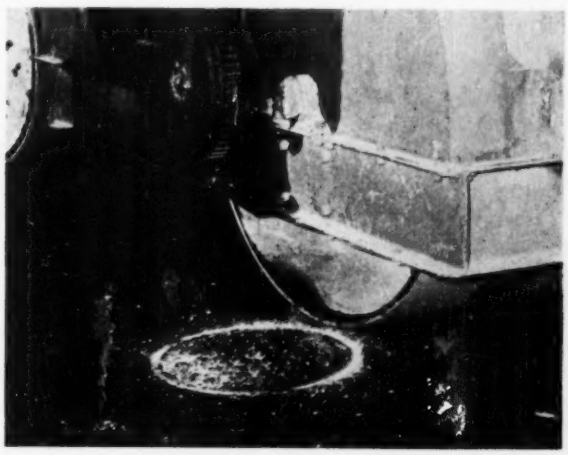
The rings first were introduced in Kansas City at the American Public Works Association in 1950. They represent an outgrowth of the great amount of repair and maintenance work that had to be done on municipal streets during the war years when "deferred maintenance" was forced on city streets by war priorities.

Generally, the practice was to place a layer of asphalt surfacing on those streets requiring improvement. This custom created the need for raising the manhole structures to meet the new elevation. Usually this was a costly and time-consuming task.

The practice in Kansas City of simply placing an adapter ring in the old manhole so that it could be raised without this annoyance or expense offered an easy way of speeding this phase of the work.

Some cities have paved over manholes, hoping to uncover them at a later date, and occasionally have lost track of where they are.

Asphaltic material is then placed around the raised manhole and paving is continued.



Here is the manhole cover, flush with the new pavement surface and raised without need to rebuild the manhole.

How to maintain streets at *rock-bottom cost*

This Cat No. 112 Motor Grader ditches a new road, leading to the industrial district of Hoquiam, Washington.

Working every day for the city of Hoquiam, Washington, a Caterpillar No. 112 Motor Grader builds new roads and maintains 23 miles of streets. Its record of low-cost performance is a source of pride to Street Commissioner Reuben Sandstrom.

"Caterpillar," he says, "is dedicated to service—not just lip service but steady, dependable, year-round service. That means a lot to our Street Department, which always operates on a limited budget. I recommend Caterpillar as a reliable, practical, economical piece of equipment."

The No. 112 is a one-man road unit that operators like to handle. They like its constant mesh transmission and easy shifting; its positive starting in all temperatures; its clean, unobstructed vision; its ample power, accurate steering and big range of blade positions.

Most important of all is the fact that the machine is *all* Caterpillar-built, including the famous Cat Diesel Engine. It uses low-cost No. 2 furnace fuel without fouling. And it's built ruggedly, to stay on the job month after month with no expensive down-time.

When service is needed, your Caterpillar Dealer is as close as your phone—ready with genuine Caterpillar parts. Call him today and ask for a demonstration. He'll show you how to hold those costs down.

CATERPILLAR, PEORIA, ILLINOIS

CATERPILLAR

REG. U. S. PAT. OFF.

DIESEL ENGINES
TRACTORS • MOTOR GRADERS
EARTHMOVING EQUIPMENT

Street Construction & Maintenance

Do It All With One Machine

There's plenty of work to do and only one machine need do it in Green Mountain Falls, Colo. When unimproved streets get into poor shape the grader quickly restores them to good condition. If streets are in need of a few loads of gravel, the grader runs down to the gravel pit where it loads the gravel onto trucks. The machine is an Allis-Chalmers Model D equipped with a rear-end loader.

Corrections, Please

To the Editor of THE AMERICAN CITY:

In reading the article on "Where to Use Fly Ash," on pages 98-99 of the October 1952 issue, in line 49, page 99, column 1, should not the reading be "was reduced by approximately one bag"? And line 42, column 2, page 99 means "greater impermeability" doesn't it? While in line 44, column 2, page 99, "effervescence" should be "efflorescence," it seems to me. These are the first errors I have noticed in more than 40 years of reading the magazine. I thought I'd bring them to your attention.

Yours truly,

ORRIN E. STANLEY
26015 *East 49th Ave.*
Portland, Ore.

EDITORIAL COMMENT: *We wish they were the first in 40 years.*

Once Over in the Spring Holds Dust in Toledo

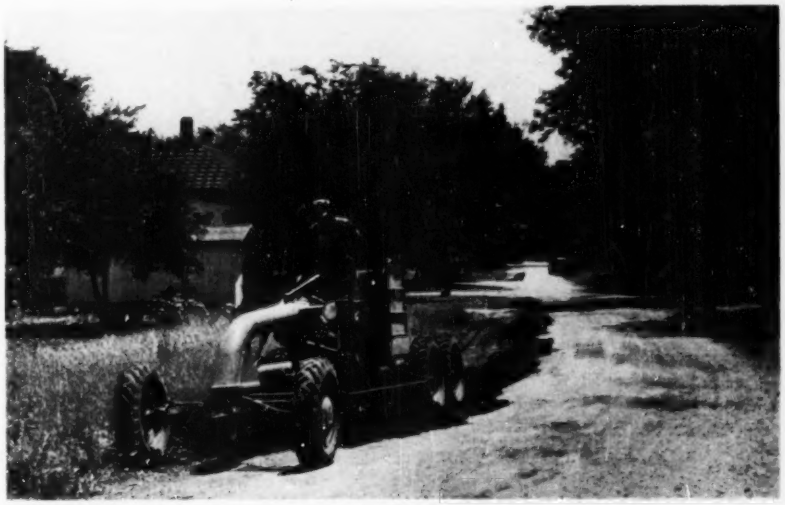
TO KEEP DUST from forming on unimproved streets, Toledo gives them a dust-palliative treatment once yearly. This consists of applying road oil at the rate of 0.2 gallon per square yard on some 490 separate streets between May 19th and June 8th of each year. The cost runs to 2.6 cents per square yard. Three pressure distributors apply the road oil. One is an 850-gallon Etnyre; the second is an 1,100-gallon South Bend; the third is a 1,340-gallon Etnyre. Work is under the supervision of the Street Maintenance Superintendent in Toledo's Division of Streets.

A Day's Work in an Hour

FRANKLINSVILLE, N. Y., gets the equivalent of six days' work in only an hour with one man. The way the village does it is to place the man on a Ferguson tractor equipped with a Pippin excavator and turn him loose.

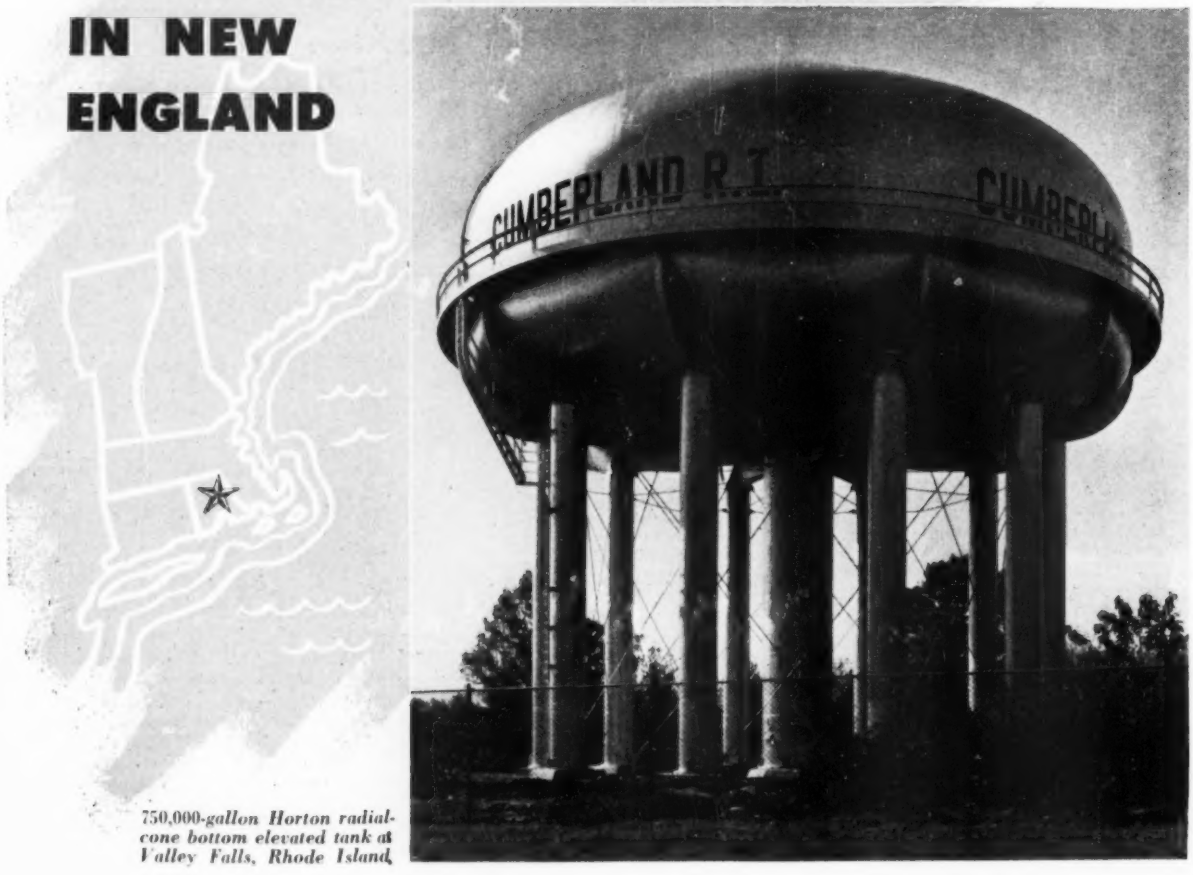
Mayor C. D. Constantine, who heads Franklinsville's municipal affairs, has assigned a man and a tractor to the task of digging trenches for water and sewer services, and of digging graves in the municipal cemetery. The ability of the tractor to perform these tasks has prompted Mr. Constantine to explore other operations that it might perform so that its ability might be exploited fully. He finds it admirably fitted to a small municipality's needs.

Little, But Oh My!



This patrol grader, the smallest of the Allis-Chalmers Model D line, is used by Pontiac, Ill., to maintain approximately 30 miles of streets. It is shown at work regrading one of the streets in an outlying area of Pontiac.

MORE HORTON ELEVATED STORAGE IN NEW ENGLAND



750,000-gallon Horton radial-cone bottom elevated tank at Valley Falls, Rhode Island.

Installation of a 750,000-gallon Horton elevated tank at Valley Falls, Rhode Island, has resulted in better water service in the Town of Cumberland. Thirteen thousand people living in a 30 sq. mi. area can now expect the "blessings" of increased elevated water capacity in the water distribution system.

As many operators of water systems have discovered, Horton elevated storage results in three important advantages . . . a reserve for fire flow . . . decreased pressure variations . . . reduced pumping costs. Combine these features with modern appearance and easier, less costly maintenance, and it is understandable why so many Horton elevated water tanks are in service throughout the country.

Horton elevated tanks are of welded steel construction. Periodic inspections and painting are sufficient to keep them in good condition and provide a long service life.

The C. W. Riva Company were the Consulting Engineers on the Cumberland water works improvements and Edward J. Hayden, Town Engineer, supervised their installation.

Horton elevated tanks with ellipsoidal-bottoms are built in standard capacities from 15,000 to 500,000 gallons. Elevated tanks with radial-cone bottoms are built in standard capacities from 500,000 to 3,000,000 gallons. If your community is outgrowing its water system, keep pace with Horton elevated storage. Write our nearest office for further information. There is no obligation on your part.

HORTON

WELDED STEEL

STORAGE TANKS

CHICAGO BRIDGE & IRON COMPANY

Plants in Birmingham, Chicago, Salt Lake City, and Greenville, Pa.

Atlanta 3	2114 Healey Bldg.	Los Angeles 17	1503 General Petroleum Bldg.
Birmingham 1	1502 North Fiftieth St.	New York 6	3308—165 Broadway Bldg.
Boston 10	1002—201 Devonshire St.	Philadelphia 3	1616—1700 Walnut Street Bldg.
Chicago 4	2127 McCormick Bldg.	San Francisco 4	1533—200 Bush St.
Cleveland 15	2236 Midland Bldg.	Seattle 1	1301 Henry Bldg.
Detroit 26	1501 Lafayette Bldg.	Tulsa 3	1625 Hunt Bldg.
Houston 2	2101 C & I Life Bldg.	Washington 6, D. C.	1163 Cafritz Bldg.

Water Supply & Treatment

58-Year-Old Pipeline Rebuilt

Pipe comes to the job in two 35-foot sections already joined.

A section of the new 100-mgd line in place and ready for backfill.

SINCE 1894, Portland, Ore., has built three large transmission lines connecting the city with its source of supply, known as the Bull Run Reserve. Today the original riveted steel line, built 58 years ago, is going into retirement, and is being replaced by a new welded steel line four times as large.

The route covered is 25½ miles long. The pipe replaced was capable of delivering 25 mgd (million gallons daily). The new main, now under construction, can supply 100 mgd and is being built of steel. It uses a tar enamel for exterior and interior lining and an outer protective wrap. It is being jointed with Dresser couplings. Roughly 10 miles of the line is built to 66-inch diameter; the remaining 15 miles, 56 inches in diameter. The main itself is being fabricated by the Beall Pipe and Tank Company of Portland, Ore.

Prior to the construction of this line, the three transmission mains could bring in only 150 mgd. Several times the city's demand for water reached peaks of 147 mgd, and restrictions on lawn sprinkling had to be enforced. The restrictions consisted of allowing those homes with odd-numbered house numbers to sprinkle lawns on odd-numbered days of the week, and those with even numbers to sprinkle on even-numbered days.

The work is being directed on George Marshall, Superintendent of the Department of Utilities.

Steam Will Clean A Small Well

LIVE STEAM appears to work well when relieving clogged well screens, according to Eugene R. Kelly, District Engineer, Wisconsin State Board of Health. The live-steam method achieved reasonably successful results and proved much cheaper than older methods such as acidizing. He cautioned that it is advisable to remove the pump while using the steam, as the increased temperatures often cause the rotating parts of the pump to stick at the bearing points.

Mr. Kelly explained this unconventional method of cleaning gravel-wall wells at the recent meeting of the Wisconsin Section of the American Water Works Association held in Madison.

American Legion Gives Award to Rockwell Manufacturing Company

William C. Doyle, Pennsylvania State Commander of the American Legion, is shown presenting to Herbert S. Rockwell, general manager of the Hopewell Division of the Rockwell Manufacturing Company of Pittsburgh, Pa., a certificate of appreciation given to the company for its cooperation in employing handicapped veterans. Colonel W. F. Rockwell, chairman of the board, looks on.

The Fire Alarm Transmits All Alarms to Stations

THE TELEPHONE has been, for many years, widely used for announcing fires. Why not depend on it alone? The ready objection to a telephoned alarm of fire is that it is quite likely to be garbled due to difficulties of diction, accent, and excitement under stress of emergency, with chances for error and delay increased by the use of dial telephones. The following statement, based on experience, appears in the Standards of the National Board of Fire Underwriters:

> "It is generally recognized that there is no other thoroughly satisfactory means of sending and receiving fire alarms than an approved fire-alarm system. Telephones should not be relied upon to replace needed boxes nor to supplement any inadequacy in number or location of boxes."

The telephone, an indispensable utility and one of the greatest contributing factors to modern progress, deserves due credit for the service it has rendered the cause of fire protection. It is inherently a medium for the transmission of oral communication for commercial and social communications, never designed or intended to be made the sole instrument of the public for the vitally essential service of fire signaling.

Critics of the fire-alarm system urge that too many false alarms are sent in by box. It is true that the public fire-alarm box has a certain nuisance value in this respect because of its easy accessibility. But is it morally right to deprive the great majority of law-abiding citizens of the protection afforded by the conveniently accessible fire-alarm box because a few misuse it? Furthermore, the false alarmist is not deterred by the absence of fire-alarm boxes. The record shows that where boxes are not available false alarms are frequently sent by telephone. Possibly the leniency with which convicted false alarmists are treated may be responsible for the increasing number of false alarms that annually occur.

Not Enough Boxes

Inadequate box distribution is largely responsible for the preponderance of telephone alarms. A great majority of the people have no available means other than the telephone for calling the fire department. Most cities have fair to good box distribution only in the central high-value business districts, and poor to no distribution in the residential and outlying districts of far greater area. Therefore, it is not surprising that more than two-thirds of the alarms are received by telephone.

Prime Requisites of Fire Alarm

Failures of fire-alarm boxes to transmit alarms accurately are practically unheard of. Following the operation of a box there is no confusion and no delay; the exact location is immediately made known to the fire department. Property and life have been lost because the wrong locations were phoned in or because of delayed alarms. The inaccessibility of telephones to persons outside of buildings, especially at night, and the consequent delay in giving an alarm may lead to serious loss.

Telephoning the fire department does not actually give the alarm. The fire-department operator must identify the location given with that of the nearest fire-alarm box and then give the alarm to the fire stations by the public fire-alarm telegraph system. Thus, the fire-alarm system, instead of being used to transmit only a small minority of the fire alarms is, in fact, used to deliver to the fire-fighting forces all fire alarms that are received from any source.

Hopkins, Minn., Hires Police Cars

HOPKINS, MINN. (population, 7,600), now leases two Fords as police squad cars and one Ford as a staff car. Police cars cost the city $85 per month; the staff car $80. The Lend Lease Transportation Company of Minneapolis furnishes special tires and tubes, Leece-Neville alternators, pays all maintenance costs, except those of oil and gas, and replaces the cars every 30,000 miles or each model year.

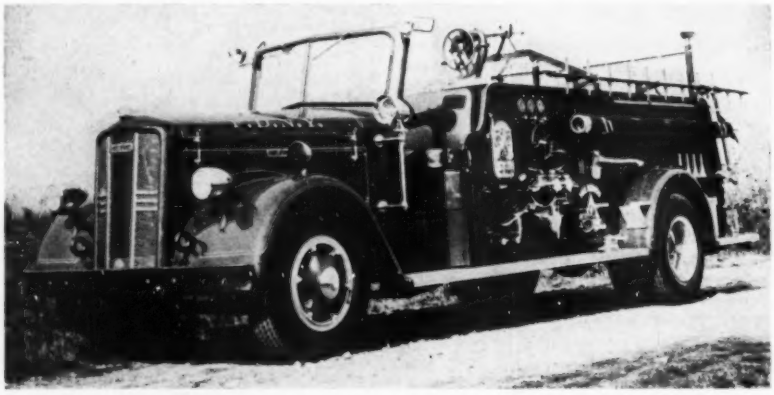
The city pays the cost of installation and removal of Beaconray lights, sirens, police radios, and the Telephone Company radiotelephone with which the Ford staff car is equipped.

Cost to the city of owning and maintaining three cars exceeded $100 per month for the same items furnished by the lessor under contract, and the city was unable to trade its motor equipment rapidly enough to avoid heavy maintenance on motors, clutches, and tires.

New York City Buys 91 Pumping Engines

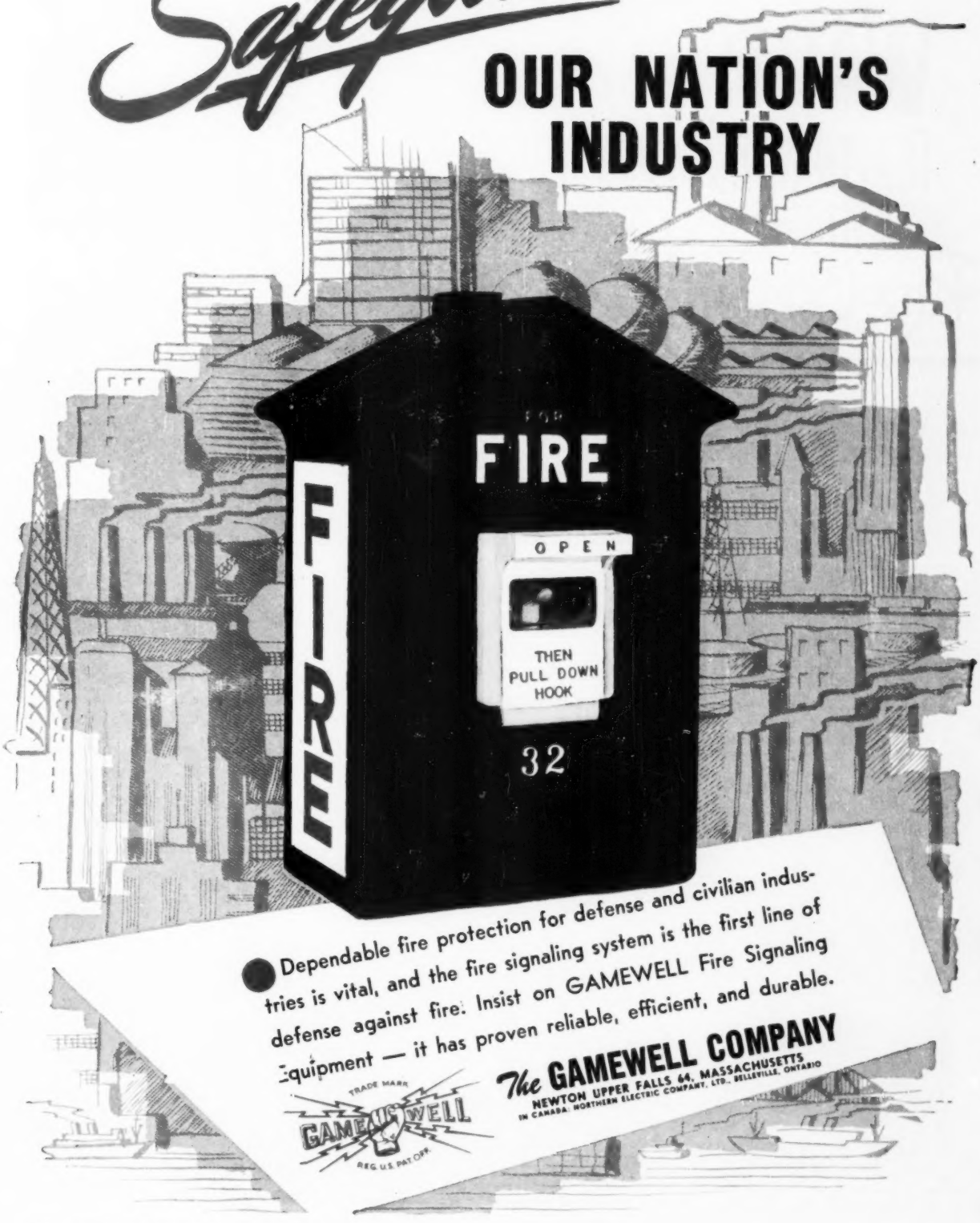
DAILY for 1½ months prior to December 10, 1952, a 750-gallon pumping engine was delivered by the Ward LaFrance Truck Corporation, of Elmira, N. Y., to the New York City Fire Department. This completed an order for 42 fire engines. Another contract for 49 of this design was placed with this manufacturer by the city in October, 1952.

Among the innovations—for New York City—are a 250-gallon booster tank on the new pumping engines and the use of 1½-inch fire hose. The current order, for 49 pumping engines, is said to be the largest ever placed by a municipality. They are equipped with Leece-Neville alternators. With these new engines, Ward LaFrance will have 225 pieces of apparatus in service in New York City.



One of 42 Ward LaFrance 750-gpm pumping engines delivered to the New York Fire Department during November and December 1952.

Safeguard OUR NATION'S INDUSTRY

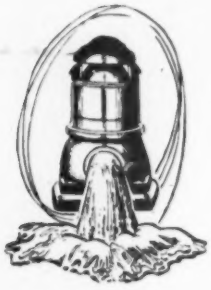


Dependable fire protection for defense and civilian industries is vital, and the fire signaling system is the first line of defense against fire. Insist on GAMEWELL Fire Signaling Equipment — it has proven reliable, efficient, and durable.

TRADE MARK GAMEWELL REG. U.S. PAT. OFF.

The GAMEWELL COMPANY
NEWTON UPPER FALLS 64, MASSACHUSETTS
IN CANADA: NORTHERN ELECTRIC COMPANY, LTD., BELLEVILLE, ONTARIO

WATER for Atlantic City's RITZ-CARLTON



DATA:

- —WELL; Drilled by rotary clay-seal process, 850 feet deep in the Kirkwood stratum; double cased and graveled.
- —CASING; 145 feet of 16" and 747 feet of 12" steel.
- —SCREEN; 61 feet of 6-guage Armco Iron.
- —PUMPS; Originally equipped with 4-stage 15" bowls with cast iron impellers. Later replaced with 5-stage 12" bowl and bronze impeller.
- —MOTOR; Original 25 HP electric still giving good service.

On Atlantic City's famous board walk, stands one of America's loveliest hotels—the Ritz-Carlton. Twenty-eight years ago, the owners turned to Layne for a well and pump installation. In the intervening years—over a quarter century, they have never experienced one fraction of disappointment in the dependability, durability and ever faithful performance of their purchase.

In the twenty-eight years of almost constant operation, the Layne unit has produced more than 1,471,680,000 gallons of water—all the fresh water needed by this great hotel. Upkeep expense since the day installed has averaged less than a hundred and seventy dollars a year. One amazing fact is that the original Armco iron screen is still functioning. Another is that the well was installed by a method that completely sealed off all infiltration of salt water in a most difficult salt water area. Such is the life expectancy, satisfactory operation and generally low upkeep expense of Layne wells and pumps.

For Water Well and Pump Catalogs, write to

Layne & Bowler, Inc.

GENERAL OFFICES, MEMPHIS 8, TENN.

Layne

There are Layne Associate Companies located throughout the country. The one near you already understands the drilling and water bearing formations in your area.

WATER WELLS
VERTICAL TURBINE PUMPS
WATER TREATMENT

Sewerage & Sewage Treatment

An Enzyme Trouble Shooter for Sewer Problems

WHEN AN EMERGENCY arises in the operation of the San Leandro sewage-treatment plant, at Oakland, Calif., Harvey J. Milts, Superintendent, pulls out his emergency chaser, Enzymatic.

Some time ago, 300 cubic yards of grease and scum had accumulated on the bottom of one of the plant's digesters, following a "pumping-down" operation for internal repairs. This scum and grease contained a large amount of tomato skins and other undigested material common to sewage-treatment plants. The grease and scum piled on the bottom and sides of the digester was of such a state that it actually could support the weight of a man walking on it. Attempts to break up the scum with a fire hose proved tiring and tedious. Five days after application of 25 pounds of Enzymatic, the mass was entirely broken up with the fire hose and pumped out in about four hours.

Later an artificially induced growth had developed on the high-rate trickling filter ponding approximately 75% of the filter area. One pound of Enzymatic was applied to the distributors very slowly and allowed to mix and be spread evenly over the entire filter-rock area. Within three to four days the ponding had cleared up entirely and the normal filter growth soon replaced the artificially induced growth.

On another occasion, one pound of Enzymatic was applied to a 6-inch sludge line running from the primary sedimentation tank to the pump sump. This line had given considerable trouble in the past by clogging up. Since the Enzymatic was added, no clogging has occurred.

Two sludge beds 60 feet square have been drawn from the secondary digester since the first application of the Enzymatic described. This sludge showed cracking tendencies in two days, and in two weeks could actually be walked upon and forked. Normally this takes at least 30 days.

Superintendent Milts expects to use the product on a small scale in the sewer system at troublesome spots first. If this proves favorable, he will use it in the entire system.

Enzymatic is a product of the N. O. Nelson Company, of St. Louis, Mo.

Source Material For Pollution Control

TO PLAN a drive for better sewage treatment and more adequate stream-pollution abatement, municipalities and others can draw from a special source book prepared by the Federal Security Agency of the Public Health Service.

This booklet, "Source Materials of Water Pollution Control," lists articles under the headings of community action, financing, laws, industrial waste, domestic waste, research and standards, biological aspects, water resources, and films. Much of the material can be obtained by writing directly to the Federal Security Agency, Public Health Service, Washington, D. C. For other publications, the booklet lists the source and sales prices.

Vibration-Resistant Sewer Line

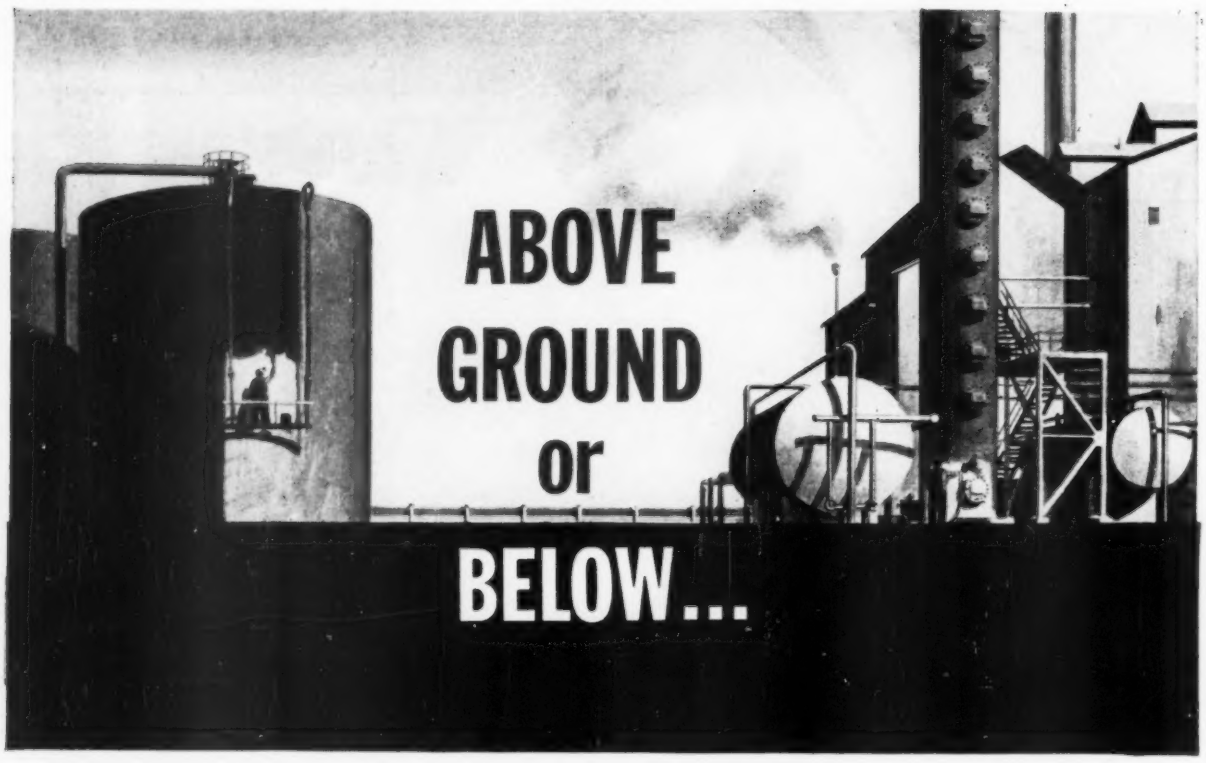
ONE CAN'T KEEP a sewer in the ground and forget about it if a railroad runs trains alongside every day unless it is a special type of sewer. Edward S. Holland, consulting engineer of Alexandria, Va., realized this so he specified Armco Asbestos Bonded, Paved and Coated sewer pipe for the 13,000 lineal feet of sewer that is being built in Fairfax County, Va. The sewer connects a new housing project with the county system. The trunk line runs alongside of the Southern Railway main-line tracks and has a diameter varying from 21 to 33 inches. The line is joined by a special Armco water-tight connecting bend.

This line was built by a private developer and will eventually be taken into the county sewer system. The county also is making use of the same type of sewer pipe in various parts of its system. Currently under way is the installation of 4,100 feet of 42-inch Armco Steel Spiral Welded pipe that will be used as a force main to convey raw sewage from the pumping station to the treatment plant. This line uses Dresser couplings for joints. In process also is the installation of 700 feet of Armco Asbestos Bonded fully coated and 100% paved pipe with special silo rods and lug-watertight connections. This line is now being installed and will carry the treated sewage from a junction chamber into the Potomac River. It is installed on pile bents.

A 20-foot length of asbestos-bonded corrugated-iron pipe is about to be placed in the trench alongside the railroad. Note the bands that form the joints in the foreground.

PHOTOS COURTESY OF ARMCO DRAINAGE & METAL PRODUCTS, INC.

Where the ground was particularly marshy, the line was supported on timber bents.



PITT CHEM Tar Base Coatings

give you

better protection at lower cost

Above ground or below, you'll find Pitt Chem Tar Base Coatings ideal for preserving structural steel, tanks, underground piping, brick, masonry and stone surfaces. A single application of these economical, long-lasting coatings provides a film thickness equal to as much as *ten* coats of ordinary paint . . . and they stay on the job for *years* under conditions that usually cause ordinary paints to fail in *months*.

Pitt Chem Tar Base Coatings perform better on application and last longer because of their uniform top quality—a benefit that stems directly from our unique position as a basic and integrated producer of cold applied tar base coatings. We're able to carefully control every phase of production from coal to finished product—in a plant devoted exclusively to the manufacture of cold applied coatings. ● *We'll gladly provide more product information or technical assistance on request.*

PITT CHEM 101
A versatile, heavy duty coating that withstands severest corrosive conditions.

PITT CHEM 102
A thin, high gloss maintenance coating for steel and concrete surfaces.

PITT CHEM 103
A heavy duty coating for metal exposed to corrosive vapors, dilute acids and alkalis.

PITT CHEM 104
A fast drying, high gloss coating for equipment handling potable water.

W&D 4148

PROTECTIVE COATINGS DIVISION

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COAL CHEMICALS • AGRICULTURAL CHEMICALS • PROTECTIVE COATINGS • PLASTICIZERS • ACTIVATED CARBON • COKE • CEMENT • PIG IRON

Sweep Up, Pick Up, and Haul

WATERTOWN, N. Y., with 60 miles of residential streets, and 20 more miles of streets in the business and industrial areas, clears away about 100 cubic yards of street debris during the summer, and nearly 175 cubic yards per week during other seasons.

To do this work, Ray W. Howard, Superintendent of Public Works, uses two Austin-Western sweepers. One has a 2½-yard hopper; the other has a 1½-yard capacity. The larger does the greater bulk of the work.

If the work is light, Mr. Howard will assign a truck with three or four laborers to pick up the sweepings. When it is heavy, particularly in the spring and fall, he uses a Hough Payloader to do the pickup work.

Watertown officials observe their street sanitation team in action.

Shown above is one of Dearborn's 26 small snow plows at work clearing a strip of sidewalk. These plows were of immeasurable aid to the city in its snow-removal work following the first snow storm of the winter season.

Sidewalk Plowing Popular in Dearborn

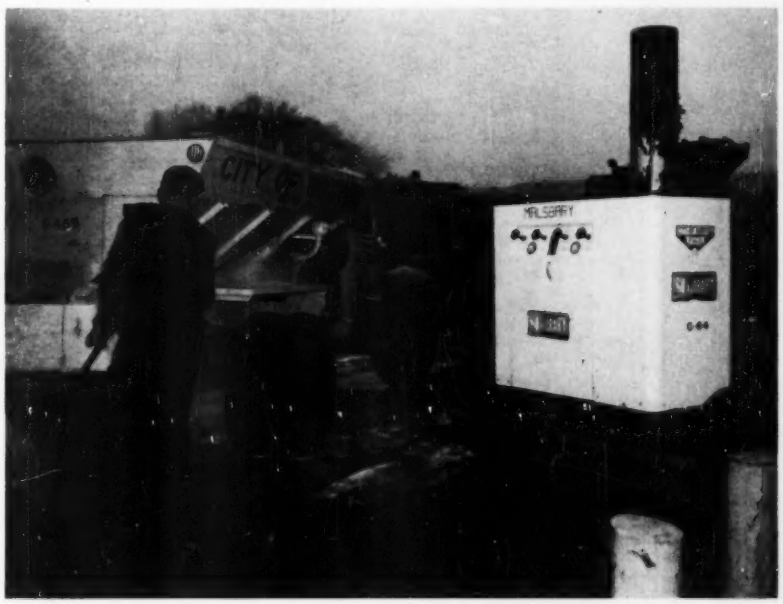
CONGRATULATIONS continue to pile up at the Dearborn (Mich.) City Hall for the new de luxe snow-removal job which surprised its 27,000 residents who saw snow plows clearing their sidewalks before daybreak.

After the first snowfall last December, Mayor Orville L. Hubbard put to work 26 Ford tractors with sidewalk V-type plows, and also a number of rotary brooms to clear the snow from the city's sidewalks.

A few complained that the plows damaged the lawns. Mayor Hubbard feels confident that more experience on the part of the men will overcome this difficulty.

Boston Steam-Cleans Trucks in a Hurry

Keeping rolling stock clean and shipshape no longer is a problem in Boston, Mass., now that this Malsbary Model 250 steam jenny has been put to work. D. J. Coughlin, Superintendent of Automotive Maintenance, reports that this cleaner enables him to clean a sanding truck in one hour, a shovel loader in 45 minutes, and a street sweeper in two hours.



Get What You Want—No Charge!

Please check the list of interesting free catalogs on this and following pages. To obtain the literature you want, write direct to the manufacturers at the addresses given. If you prefer, you may circle the identifying numbers on this coupon and mail to THE AMERICAN CITY, *470 Fourth Ave., New York 16, N. Y., and we will see that catalogs are sent to you without expense or obligation.* 1/53

700	701	702	703	704	705	706	707	708	709	710	711	712
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Name ..... **Position** .....

Address .....

Rubber Roads Stretch Dollars

700 *Stretching Highway Dollars with Rubber Roads* is the title of a booklet issued by Natural Rubber Bureau. It is prepared by Harry K. Fisher, registered professional civil engineer and rubber road consultant. Among the subjects discussed are: Developments to Date, Cost Factors in Rubber Roads, and Research to Date on Rubber in Asphalt. Photographs illustrate the use of rubber in road construction. For copy of the booklet, write NATURAL RUBBER BUREAU, 1631 K ST., N.W., WASHINGTON 6, D.C.

Safety Lanterns

701 *Catalog No.* 53 describes the Dietz Lanterns for safety. Among the models listed are: Monarch, streamline hot-blast for kerosene; Comet, streamline cold blast for kerosene, as well as Little Wizard, Little Giant, Blizzard and others. All lanterns are made of cold rolled steel plate. Finished lanterns are electrically sprayed with metallic Raybaked enamel for attractive appearance and long service. For a copy of *Catalog No.* 53, write R. E. DIETZ CO., SYRACUSE 1, N. Y.

Hydraulic Control For Snow Plows, Trucks

702 Monarch automatic power hydraulic control provides speed operation for snow plows, trucks, and tractor equipment at the flick of a finger. Dyna-Might is complete, compact, and self-contained, and is used for snow plows, road machinery, and similar practical attachments. Hy-Lo-Jack is for snow plows, truck and tractor equipment. Write for literature from MONARCH ROAD MACHINERY CO., GRAND RAPIDS, MICH.

For Snow, Ice Control

703 Use of the rust inhibitor, Banox, in conjunction with salt for clearing streets and roads of snow or ice is described and illustrated in a new folder issued by Calgon, Inc. The contents show use of salt with Banox added, describe action of this material in protecting metal surfaces of vehicles against corrosion, and point out that Banox is a nontoxic, odorless polyphosphate compound which is harmless to the skin, eyes, clothing, shoes, animals, paint, auto finishes, and tires. Copies of the folder entitled *Stop! Look! and Save with Banox* are available from CALGON, INC., HAGAN BLDG., PITTSBURGH 30, PA.

For Sanitary Landfill

704 The Terratrac crawler solves garbage and refuse disposal problems easily, efficiently, and economically, states the manufacturer. It digs, loads, carries, grades, digs trenches, spreads, compacts, and covers the refuse. For literature, write AMERICAN TRACTOR CORP., CHURUBUSCO, IND.

Spreader Jets for Sewage Treatment

705 A new 4-page bulletin, No 313-A, describes the function and application of P.F.T. spreader jets for rotary distributors. P.F.T. spreader jets with removable deflectors as well as for the patented P.F.T spreader jet with hinged deflector are detailed and pictured. For bulletin, write PACIFIC FLUSH TANK CO., 4241 RAVENSWOOD AVE., CHICAGO 13, ILL.

Fire Alarm, Traffic Cables

706 Ansonia Ankoseal fire alarm and traffic cables are described in pamphlets issued by this company. New insulation and jacket thermoplastics for fire alarm cables provide cities with better safety in critical fire-alarm reporting. For traffic control, all-plastic cables are employed. Conductors are solid bare soft copper insulated with Ansonia properly plasticized polyvinyl chloride. Literature available from THE ANSONIA ELECTRICAL CO., ANSONIA, CONN.

Water Mains Without Maintenance

707 *Mains without Maintenance* reports on Century asbestos-cement pipe with Century simplex couplings. Among the contents listed are: Handling, Alignment and Grade, Trenching, Installation of Pipe, Simplex Coupling and Puller, Curved Lines, End Caps, Hydrostatic Tests, and Storage of Gaskets. For a copy of the publication, write KEASBEY & MATTISON CO., AMBLER, PA.

Microwave Radio Systems

708 A new 20-page informational booklet entitled *An Introduction to Microwave* provides a semi-technical description of RCA microwave equipment. It is illustrated with photographs, diagrams, charts, graphs, and maps. Copies of it may be obtained by addressing a request on company stationary to the MICROWAVE COMMUNICATIONS SECTION, RADIO CORPORATION OF AMERICA, CAMDEN 2, N. J.

Controls, Prevents Sewage Odors

709 Welsbach Ozone controls and prevents sewage odors. The manufacturer reports that because of its effective use in controlling sewage odors at the Ward's Island Sewage Disposal Plant, New York City, engineers have specified ozone for the odor control system at the new Owls Head Sewage Treatment Works. Additional data may be obtained from THE WELSBACH CORP., OZONE PROCESSES DIVISION, 1500 WALNUT ST., PHILADELPHIA 2, PA.

Emergency Diesel Power

710 Nordberg 6 to 30-kw diesel electric power sets are especially suited for the power requirements of police and fire department radio stations, and for standby in jails, hospitals, and other municipal buildings. The great strength of the oversize crank shaft is coordinated with an overall design that watches fuel economy and avoids undue wear. For literature describing "4FS" diesel power units, write NORDBERG MFG. CO., MILWAUKEE 7, WIS.

Equipment for Water And Sewage Plants

711 Equipment for water and sewage plants by Infilco include water softeners, chemical feeders, proportioners, pressure and gravity filters, automatic sewage samplers, rotary distributors and dosing siphons, and clarifiers, among others. Bulletin 1100 reports on the C.-A.-P. System (controlled air pressure). For a copy of this or other literature, write INFILCO INC., 2750 S. 12th AVE.,TUCSON, ARIZ.

Parking Meters

712 Martin Red Ball meters help solve parking problems. The red ball serves as the violation signal that can be seen from all directions up to 500 feet away and pops up when parking time expires. The enclosed force-feed coin slot cannot jam, clog, or freeze. Clock faces are equally visible from either side of meter, and a large coin receptacle holds busy week's deposits. Literature may be obtained by writing MARTIN RED BALL PARKING METERS, BENTON, ILL.

(Please turn to page 26 for more Bulletins)

The protection of vital public records is your responsibility today

Here's how you can get valuable extra protection with low-cost Recordak microfilming—

First of all, Recordak microfilming enables you to put your large, unwieldy record accumulations on compact rolls of film. Up to 6,350 legal-size documents, for example, on a roll that's no larger than your palm. And each tiny film image is photographically accurate and complete . . . sharp and clear in every detail when you view it in a Recordak Film Reader.

This tremendous "de-bulking" makes it possible for you to vault-store *all* your vital records—not just a "file-full." Makes it possible, too, for you to send complete sets of duplicate film records to any destination—quickly, conveniently. Also, it enables you to reclaim valuable floor space—to move bulky original records (if they must be retained) to low-cost storage areas.

The cost of "playing it safe" with Recordak microfilming is surprisingly low—as hundreds of City, County, State, and Federal agencies know.

Documents can be recorded instantaneously—for a *fraction of a cent apiece.* And a Recordak Microfilmer—just right for your requirements—can be obtained on an *attractive purchase or rental basis.*

Write today for complete details. Recordak Corporation (*Subsidiary of Eastman Kodak Company*), 444 Madison Ave., New York 22, N. Y.

RECORDAK

(Subsidiary of Eastman Kodak Company)

originator of modern microfilming—and its application to government routines

"Recordak" is a trade-mark

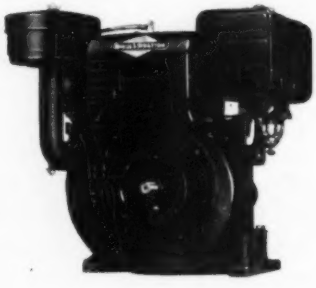
THE GREATEST SERVICE ORGANIZATION OF ITS KIND IN THE WORLD . . .

Near you there is a Briggs & Stratton service organization — factory trained and supervised — ready to tune up, repair, or even rebuild your Briggs & Stratton engines with *original* Briggs & Stratton parts.

If your Briggs & Stratton engines are not busy during these winter months, now is the ideal time to have them serviced — to insure continued peak performance for busy periods ahead.

Only Briggs & Stratton maintains such complete world-wide authorized service facilities — a big "plus" that you get only when you specify Briggs & Stratton engines on the gasoline powered equipment you buy.

Briggs & Stratton Corporation, Milwaukee 1, Wisconsin, U. S. A.



In the automotive field Briggs & Stratton is the recognized leader and world's largest producer of locks, keys and related equipment.

Catalogs for You

Write direct to the manufacturers or use coupon on page 24

Impactor Patches Pavement

713 The Wayer Impactor patches pavement, paves drives, walks, and small areas. It super-tamps and smoothly finishes 45 to 60 square feet of material per minute. Literature available from WAYER IMPACTOR, INC., 12 N. THIRD ST., COLUMBUS 15, OHIO.

Sewer Cleaning Equipment

714 The Thomas Drain Service lends cities equipment to maintain its sewers, and has a sewer department to give advice on cleaning sewers. It points out that it is economical to eliminate sewer trouble by preventing cleaning. Details can be obtained from THOMAS DRAIN SERVICE, 35 S. COLLEGE ST., AKRON 8, OHIO.

Mimeograph Products

715 A. B. Dick mimeograph supplies and accessories for use with all makes of suitable stencil duplicating products are described in literature issued by the manufacturer. Stencil sheets can be had for all office duplicating needs, as well as mimeograph inks, accessories for mimeograph, and other material. For literature and samples, write A. B. DICK CO., 5700 W. TOUHY AVE., CHICAGO 31, ILL.

Keeps Trucks Cleaner Easier

716 Cleaning municipal cars and trucks is a cinch with the handy Stewart-Hall Super Greasemaster. No car or truck is so greasy or dirty that it can't be cleaned in half the time required by conventional methods. The company will send a complete folder describing the Greasemaster and makes a liberal free trial offer so that you can see for yourself how the equipment works. Write to STEWART-HALL CHEMICAL CORP., MOUNT VERNON, N. Y.

Hydraulic Hoists

717 A new series of 15 technical data bulletins descriptive of the complete line of Galion hydraulic hoists is being issued by this manufacturer. Each bulletin includes full specifications for one individual hoist. Among data listed are: hoist type, weight, stroke, cylinder diameter, mounting height, dump angle, and piston rod diameter. Detailed information from THE GALION ALLSTEEL BODY CO., GALION, OHIO.

Multiple Woven Fire Hose

718 Mildew has no place to live or breathe in Eureka multiple woven fire hose because there are no moisture pockets where water can accumulate, and no water pockets to freeze in cold weather. The plies of Eureka multiple woven are circular woven and bound together into one homogeneous unit. Further details can be obtained from EUREKA FIRE HOSE CO., 195 HUDSON ST., NEW YORK 13, N. Y.

Air Compressor

719 The Lindsay Model 55 air compressor is powered by an air-cooled, 4-cylinder Wisconsin VF4D engine with stellite exhaust valves. It delivers air of 55 cfm at 90 pounds' pressure. Model T-55 is mounted on a torsion spring axle with two standard size automobile tires. Other models are No. 55, the standard portable, and S-55, which is skid mounted. Further information can be obtained from P. K. LINDSAY CO., 97C TILESTON ST., EVERETT 49, MASS.

(See page 28 for more Bulletins)

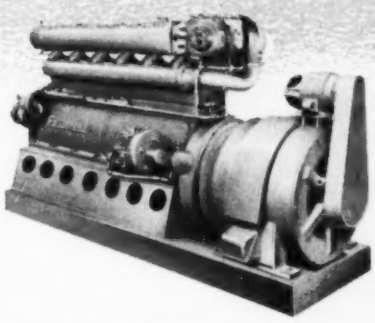
Choose the Finest in Diesel and Dual Fuel Power

ENTERPRISE

QUALITY BUILT FOR CONTINUOUS, HEAVY-DUTY SERVICE

MORE for your Power Dollar

Enterprise Diesel and Dual Fuel Engines are providing maximum efficiency at lowest cost in every type of stationary service — utility plant, municipal power, REA co-op, sewage disposal and a host of industrial applications. Typical units shown here are representative of the complete Enterprise 4-cycle line, built in 3, 4, 6 and 8 cylinder models, ranging from 68 to 2056 HP —generator sets to 1402 KW. To get the *most* for your power dollar, get the facts on Enterprise today.

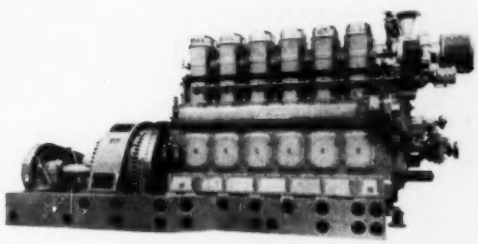


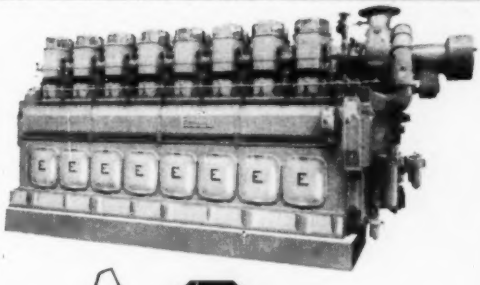
MODEL DSM-36

Enterprise M Series Diesels are built in 3, 4 and 6 cylinder models, 8" bore x 10" stroke. Turbocharging is available on 6 cylinder engine, as shown at left. Ratings in this series range from 68-400 HP at 450-800 RPM.

MODEL DSG-36

Series G Diesels, in 6 and 8 cylinders, furnish slow speed, heavy-duty power in a wide variety of services. Designed with 12" bore x 15" stroke, this series is rated 273-1388 HP at 250-600 RPM. Turbocharging available on all models.





MODEL DSQ-38

Largest in the Enterprise line, Series Q Diesels are built in 6 and 8 cylinder models, 16" bore x 20" stroke, normally aspirated and turbocharged. Conservatively rated 647-2056 HP at 250-375 RPM.

When you buy Enterprise, you can count on prompt, expert service. Enterprise branch offices and parts warehouses are strategically located to provide 24-hour service to every point in the nation.

GENERAL METALS

Enterprise DEPENDABLE Diesels

ENTERPRISE ENGINE & MACHINERY CO.

A Subsidiary of General Metals Corporation

18th & Florida Sts., San Francisco 10, Calif.

Which Catalogs Interest You?

Write direct to the manufacturers or use the coupon on page 24

Rotary Distributors For Sewage Works

720 American reaction driven and motor driven rotary distributors are used on rapid or standard rate sewage filters, sand filters, or for water aeration. The application of an oil seal and motor drive are two American features which have been perfected. Additional data is supplied in technical supplements which may be obtained from THE AMERICAN WELL WORKS, AURORA, ILL.

Safety Treads

721 A new file folder providing complete information on safety treads has been completed by Wooster Products, Inc. The handy file form contains 28 plates of details on abrasive cast and safe groove treads, expansion plates, platforms, curb bars, and flood grids. The folder may be obtained by writing WOOSTER, PRODUCTS, INC., DEPT B 102, WOOSTER, OHIO.

Helps Handle Peak Sewage Loads

722 The little city troubled with a peak sewage load can get help during seasonal industrial loads by the Collodair system of solids recovery. This removes fermenting solids that cause trouble in settling tanks, and also helps increase the efficiency of trickling filters. Learn about this by writing BULKLEY, DUNTON PROCESSES, INC., 295 MADISON AVE., NEW YORK 17, N. Y.

Brush Grinder

723 *Bulletin No. H-552* reports on the M & M brush grinder which reduces brush haulaway costs up to 85%. It converts a truckload of brush into a barrel-full of chips in 21 minutes, and is suitable for municipalities, power companies, and tree servicemen. The new Model 3 chews up limbs as large as 6 inches in diameter. A pamphlet may be obtained from MITTS & MERRILL, INC., 1003 SO. WATER ST., SAGINAW, MICH.

Floor Cleaning Equipment

724 Catalog No. 960 reports on Geerpres floor cleaning equipment, which includes various types of mops, mopsticks, wringers, tanks and chassis. Geerpres wringers have staggered tooth design to provide smoother action and prevent gears from slipping out of mesh sideways. Models No. 1624 and 1624-T are designed to handle mops from 16 to 24 ounces. For a copy of catalog, write GEERPRES WRINGER, INC., MUSKEGON, MICH.

Traffic Warning Flashers

725 Flashers for traffic warning beacons are for all types of signals: stop signs, loading zones, warning, traffic islands, safety zones, bridge abutments, caution, and detours. Small, ruggedly and compactly constructed, it will operate in any position and is not affected by extreme variations in temperature. Further information may be obtained by writing TIME-O-MATIC CO., DANVILLE, ILL.

Elevated Steel Tanks

726 Elevated steel tanks of large capacity are made by this company and reported at length in a new catalog. Among the designs are the Horton Radial-Cone bottom and the Hortonspheroidal. Structures built are from 500,000 gallons capacity up, with a low range in head between the upper and lower water level. For copy of catalog, write CHICAGO BRIDGE & IRON CO., 2127 McCORMICK BLDG., CHICAGO 4, ILL.

Concrete Mixer

727 A new and improved Model 3½-S tilting concrete mixer is announced by Kwik-Mix. It is powered by a standard make gasoline engine of 3.4 hp with smooth V-belt power transmission. The new half-bag end discharge Dandie Mixer is equipped with improved mixing blades that provide faster mixing cycles. Literature is available from KWIK-MIX, PORT WASHINGTON, WIS.

Front-Mounted Pump For Fire Engines

728 For firemen and town and village officials, this new bulletin describes the American-Marsh Model UA front-mounted, gear-driven, centrifugal fire pump. The pump serves two or more high-pressure fog or straight streams while the truck is moving. Bulletin 8330-AD can be had from AMERICAN-MARSH PUMPS, INC., BATTLE CREEK, MICH.

Wood and Steel Bleachers

729 Portable and permanent wood bleachers, portable steel grandstands, and permanent steel stadiums are made for safety and comfort by Leavitt. Telescoping bleachers are furnished in standard section lengths of 16 feet and shorter sections are supplied where necessary. Descriptive literature may be obtained from LEAVITT BLEACHER CO., URBANA, ILL.

Self-Propelled Power Lawn Mower

730 The Snappin' Turtle is a self-propelled rotary power lawn mower. It cuts, rolls, trims, smooths and pulverizes. The six models range from 19 to 25 inches, and are designed for every type of property. They feature heavy-duty engines from 2 to 6 hp, and have adjustable cutting height from 1 to 3½ inches. Descriptive literature available from SOUTHERN SAW WORKS, ATLANTA, GA.

Pneumatic Sewage Ejectors

731 You avoid the headaches and labor problems of cleaning bar screens and caring for clogged pumps when you use the pneumatic ejector. This unit is particularly useful in handling relatively small flows of sewage at booster stations, lift stations, and sludge at sewage-treatment plants. Municipal installations range from New York City to Great Falls, Mont. Learn all about it by writing for the booklet supplied by BLACKBURN-SMITH MFG. CO., INC., SEABOARD TRUST BLDG., HOBOKEN, N. J.

Revise Your City Ordinances

732 This company codifies, classifies, edits, revises, and indexes city ordinances, and will publish a modern City Code of Laws for your municipality. Full details may be had from MICHIE CITY PUBLICATIONS CO., CHARLOTTESVILLE, VA.

Guide for Fire Protection Equipment

733 A new, index, 40-page Buyers' Guide for portable fire extinguishers and fire fighting accessory equipment, illustrates a complete line of fine protection equipment for every type of fire hazard, and describes applications, special features, construction details, and pertinent specifications. It is available in either bound catalog form or loose leaf sheets with a convenient labeled file jacket. Copies will be sent without charge upon request on your letterhead to THE FYR-FYTER CO., 221 CRANE ST., DAYTON, OHIO.

Joint-Sealing Compound For Concrete Pavements

734 Flintseal rubber asphalt hot-poured joint sealing compound for concrete pavements is described in a new data sheet issued by the manufacturer. Illustrations show the latest specialized equipment used for melting and pouring Flintseal, and methods and machines used in cleaning and preparing joints for sealing. For a copy of data sheet, No. I-H 601, write THE FLINTKOTE CO., 30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.

Float-Operated Controls

735 Autocon Floatrols are used for open tanks and sumps in water, and sewage, systems. They operate 1 to 3 circuits in sequence or combination with a single float. There is no need for multiple arrangements of single-circuit float switches. Bulletin No. 3100 describes the equipment. It may be had by writing AUTOMATIC CONTROL CO., ST. PAUL 4, MINN.

Motor Graders For Snow Removal

736 Adams motor graders are employed for fast, low-cost snow removal. The Adams V-plow and wing is for average snow removal work, and Adams powerful rotary plow conquers the deepest drifts. A large capacity plow with high-lift curvature lifts the snow almost five feet. Descriptive literature available from J. D. ADAMS MFG. CO., INDIANAPOLIS 6, IND.

Utility Trencher

737 The Cleveland Model 95 trencher is versatile, compact, maneuverable, productive, and economical, states the manufacturer. It is employed for water and gas mains and extensions, road widening, telephone conduit, power cable, housing projects, highway drainage, and septic tank beds. Descriptive literature may be had from THE CLEVELAND TRENCHER CO., 20100 ST. CLAIR AVE., CLEVELAND 17, OHIO.

Rotary Snow Plows For Heavy Duty

738 Drifts and heavy snow are quickly cast aside with Bolens Sno-Caster rotary snow plow attachments powered by Bolens one or two-wheel garden tractors. Elimination of usual blower principle increases snow throwing power and prevents clogging and stalling. Full details can be had from BOLEN PRODUCTS DIVISION, FOOD MACHINERY AND CHEMICAL CORP., PORT WASHINGTON, WIS.

Lawn Mower Equipment

739 Worthington Mower Co. has prepared descriptive literature on its lawn-mower equipment, among which are the Model G tractor-gang mower, the all-around workhorse; the self-lift Ranger which speeds mowing and between-job travel, and the Model F Chief tractor with gang-mower units. For copies, write WORTHINGTON MOWER CO., STROUDSBURG, PA.

Films on Civil Defense

740 A leaflet describing this company's motion picture film, *Target, U. S. A.*, reports that this guide to action in the atomic age shows practical atomic bomb defense for plants and personnel. It is available in 16mm sound, both in full color and black and white in two reels and runs for approximately 20 minutes. Another film is *Pattern for Survival*. For literature, write CORNELL FILM CO., 1501 BROADWAY, NEW YORK 18, N. Y.

(Please turn to Page 30 for more Bulletins)

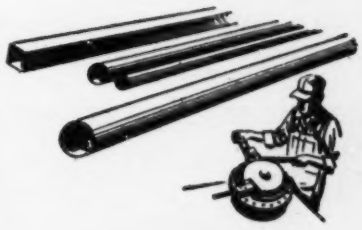
RYERSON

The Municipal P. A.'s Department Store

Here are a few of the many types of steel and related products on hand right now, ready for immediate shipment from your nearby Ryerson plant. Many may be used in place of products that are still hard to get. Check the items you need, and save time by ordering them next time you call Ryerson.

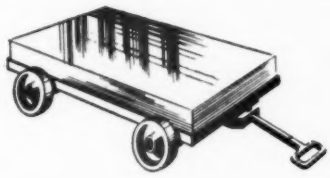
ALLOYS

Tested alloys of known hardenability, both standard and aircraft quality. Complete heat treatment guide with each shipment.



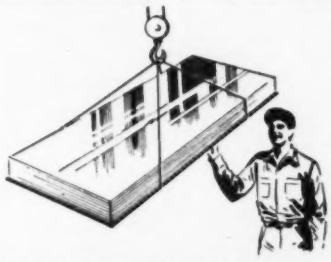
WELDED MECHANICAL TUBING

Hot and cold rolled, rounds and squares in a wide range of sizes. Consider cost. Substitute for seamless tubing.



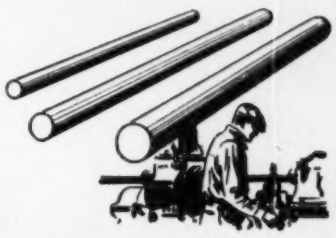
CARBON SHEETS

Both hot and cold rolled coming into better supply, especially cold rolled in the heavier gauges.



STRAIGHT CHROME STAINLESS

No allotment required for these stainless bars, plates and sheets—and they can often replace restricted nickel-bearing types.



TOOL STEEL

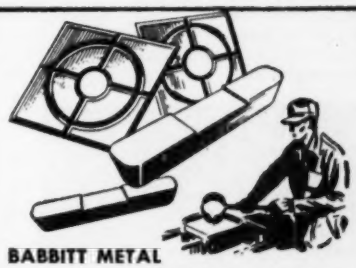
Water, oil or air hardening steel. High in quality; economical in price. Hardening data with every shipment.

SAFETY PLATE

Strong, non-skid Inland 4-Way Safety Plate protects feet against slipping, floors against wear. Easily fabricated.

CHAIN & WIRE ROPE

Rugged, dependable TM chain, iron, steel and alloy qualities, furnished to order. High quality wire rope shipped from large stocks.



BABBITT METAL

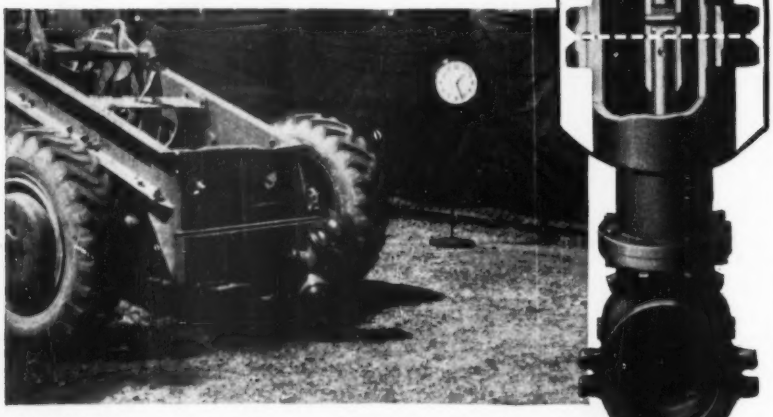
Glyco Babbitt, an exclusive Ryerson product, has physicals equal to high tin Babbitts; costs substantially less and is unrestricted.

RYERSON STEEL

JOSEPH T. RYERSON & SON, INC. PLANTS AT: NEW YORK • BOSTON • PHILADELPHIA • CINCINNATI • CLEVELAND • DETROIT
PITTSBURGH • BUFFALO • CHICAGO • MILWAUKEE • ST. LOUIS • LOS ANGELES • SAN FRANCISCO • SPOKANE • SEATTLE

From Break to Service *in 11 minutes...*

THE KENNEDY SAFETOP is the only hydrant with the threaded breaking ring that gives positive connection and rigid alignment of the two standpipe sections. Extensive tests and actual service reports show that the Kennedy *Safetop* can stand as tough a blow as the conventional hydrant without damage. But under a smashing impact, it always breaks cleanly at the breaking ring, without damage to working parts.



SHEARED OFF by a heavy road-scraper at 1:26, the Kennedy *Safetop* breaks evenly at the ground level.

Photos taken at N. Y. State Section meeting, A.W.W.A., April 1949.

WITH ONLY an inexpensive *Safetop* Repair Kit and a few common tools, one man can permanently repair the Kennedy *Safetop*.

NO NEED FOR DIGGING because breakage is all above ground . . . no flooding because compression-type valve closes with water pressure.

IN JUST 11 MINUTES the Kennedy *Safetop* is back in service . . . working as smoothly and efficiently as if nothing had happened.

THE COMPLETE KENNEDY LINE includes a wide range of A.W.W.A. valves and fire hydrants. When you standardize your community on KENNEDY, you are assured of the same high quality and dependability that have characterized all products of KENNEDY for 74 years.

WRITE FOR SAFETOP BULLETIN 105

THE **KENNEDY**

VALVE MFG. CO. • ELMIRA, N.Y.

Est. 1877

VALVES • PIPE FITTINGS • FIRE HYDRANTS

Other Catalogs

Write direct to the manufacturers or use coupon on page 24

Water Systems Counsel

741 *The Pittsburgh Service for Water and Waste Water Systems* is the title of a 4-page folder which outlines the service, counsel, and engineering skill offered by this company to aid municipalities in obtaining highest efficiency from water and sewage systems. For a copy, write PITTSBURGH PIPE CLEANER CO., 133 DAHLEM ST., PITTSBURGH 6, PA.

Mows Spots That Are Hard to Reach

742 You can cut lawns close to walls, curbs, in narrow passageways, around monuments, and markers — everywhere that standard mowers fail. Learn about them by writing THE BUNTON CO., 307 SOUTH FLOYD ST., LOUISVILLE 2, KY.

Standby Electric Power

743 Pioneer generators go on when power goes off. The belt-driven generators provide a.c. current to operate water system pumps, milking machines and coolers, glow heaters, and large 28-cubic foot deep freeze. For literature, write PIONEER GEN-E-MOTOR CORP., 5841 W. DICKENS AVE., CHICAGO 39, ILL.

Waste Receptacles Promote Sanitation

744 The Sydell waste receptacle promotes sanitation, protects health, curtails pedestrian litter, and saves manpower. The side-elevated rubbish container is designed so that it can easily be suspended from any tree, post, or wall. New literature on the product may be obtained by writing SYDELL MFG. CO., INC., 429 SOUTH TRYON ST., CHARLOTTE, N. C.

Motor Graders

745 *Governmental Graders* is a booklet especially useful for governmental agencies with jurisdiction over local-rural roads. It tells how cities, counties, and other governmental groups apply the three sizes of Cat motor graders to their road building and maintenance problems. Copies of *Governmental Graders* (Form 30469); may be obtained from CATERPILLAR TRACTOR CO., PEORIA 8, ILL.

Solves Traffic Problems

746 New literature on Safe-T-Cones which solve many traffic problems is available from this manufacturer. These cones can be employed for traffic channeling, utility repairs, line painting, and emergency blockades. The steel-like rubber traffic cones are available in 18- and 28-inch sizes, painted or reflectorized. For leaflet, write RADIATOR SPECIALTY CO., CHARLOTTE, N. C.

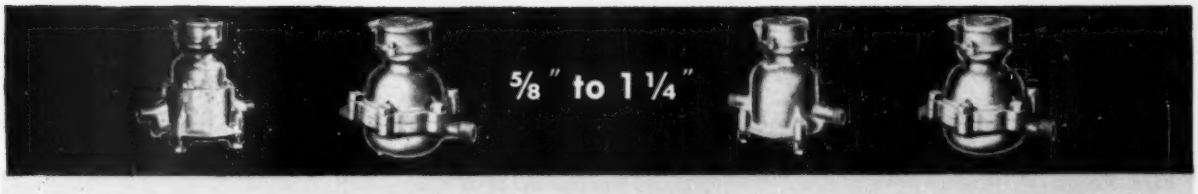
Versatile Loader

747 The Holmes-Owen loader is for state, county, and municipal use, as well as for commercial, industrial and stockpile groups. It permits the driver to load, haul, dump, do light digging, grading, and cleaning up. Among its features are dual hydraulic cylinders, control valves, elbow action arms, and hydraulic system and pump. New literature may be obtained from ERNEST HOLMES CO., CHATTANOOGA, TENN.

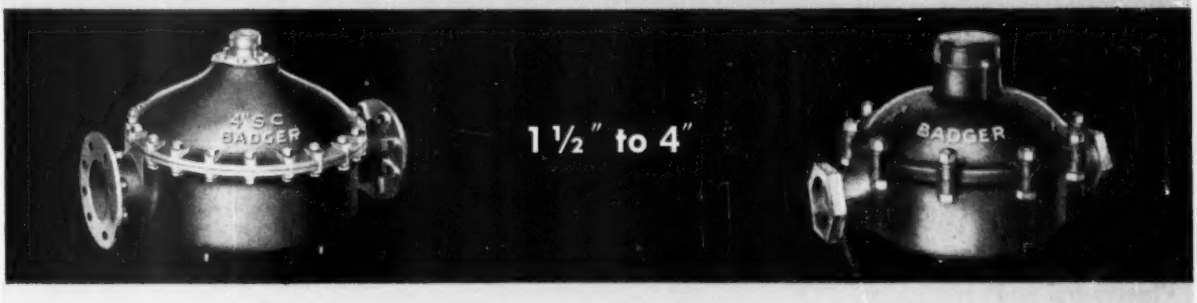
Lignum-Vitae Bearings

748 If your equipment has bearing trouble, you may find the solution in the use of Lignum-Vitae wood bearings. This wood is unusually hard, so dense that it will not float, and has enough natural oils in its pores so that bearings made from it are self-lubricating. For literature, write to LIGNUM-VITAE PRODUCTS CORP., 96-100 BOYD AVE., JERSEY CITY, N. J.

(See page 32 for more Bulletins)



there's a RIGHT SIZE and RIGHT TYPE



# of BADGER *Precision* WATER METER

for every water meter service

Badger makes the meters you need . . . any type, any size, for any water-measuring job in home or industrial service: 5/8" to 1¼" home service meters; 2" to 12" Turbine (Current) Meters; 2" to 10" compound meters and industrial meters...of many sizes and types...also time-and-money saving accessories vital to efficient installation and servicing, including famous Badger Meter Testing Machines. For complete meter service, it pays to contact Badger.

"MEASURING THE WATER OF THE WORLD"

First for Accuracy • Low-Cost Maintenance • Durability • Sensitivity

BADGER *Water* METERS

BADGER METER MFG. CO., Milwaukee 10, Wis.

Branch Offices: New York City • Philadelphia
Worcester, Mass. • Savannah, Ga. • Cincinnati • Chicago • Kansas City • Waco, Texas
Salt Lake City, Utah • Guthrie, Okla. • Seattle, Wash. • Los Angeles

Obtain this Literature Free of Charge!

Write direct to the manufacturers or use the coupon on page 24

Centrifugal Pumping Fire Engines

749 The 750-1,000 gpm Model 1600 is a custom-built triple combination fire apparatus. It features multi-service centrifugal pumps and high-output overhead valve engine. Model 1575 has similar features, while the Oren 750 gpm triple combination fire apparatus on International chassis is new. It has single stage, two, and three stage centrifugal pumps. Descriptive literature may be obtained by writing OREN ROANOKE CORP., ROANOKE 16, VA.

Safer School Crossings

750 Devised for use at school crossings, Porta-Flash is a portable sign with two 6-volt battery-powered flashing amber lights that is suitable also for barricades and men-working operations. Folder in color available from AMERICAN SAFETY SIGNAL CORP., ELKHART, IND

Playground and Gym Equipment

751 Slides, swings, merry-go-rounds, see-saws, football goal posts, score boards, and bleachers are among the equipment produced by this concern. Construction materials are solid stainless steel, stainless steel, and zinc coated steel The company's merry-go-round has hydraulic speed control. High visibility and rapid fire operation are prime features of the Game-Time scoreboard for basketball. Illustrated Catalog 523 available from GAME-TIME, INC., LITCHFIELD, MICH.

Water Analysis

752 A new Photoelectric Colorimeter and Turbidimeter known as the Chromatron has been introduced by Hellige, Inc., and described in a new Catalog No. 925. The colorimeter features selective color filters covering the entire visible spectrum, square and round absorption tubes, and hermetically sealed photocell. It permits analysis of water and sewage in the most modern, scientific manner. Detailed information in Catalog No. 925 available from HELLIGE, INC., 877 STEWART AVE., GARDEN CITY, N. Y.

Practical Guides For Weed, Pest Control

753 Practical guides for weed and pest control issued by this company help to establish sound and economical programs. "Pestmaster" formulas are an insecticide concentrate for agricultural crops, municipal and public health spraying, live-stock, and residual spraying of buildings. "Weedmaster" formulas are used to kill weed, grass, and brush. The two charts on weed and pest control describe the various formulas available, their usage, and effect. For copies, write, MICHIGAN CHEMICAL CORP., ST. LOUIS, MICH.

High-Strength Steel Bars

754 The Stressteel tensioning unit is a new kind of steel bar of extremely high strength with anchorage assembly and is employed for use in prestressed concrete construction and for strengthening and repairing existing steel and concrete structures. It is used for bridge construction, building frames, dams and retaining walls, tiebacks, pavements, poles, piles, strengthening existing structures, and for prestressing metal structures. For a copy of the new *SS Stressteel Manual*, write STRESSTEEL CORP., 207 E. 37TH ST., NEW YORK 16, N. Y.

Portable Gasoline Hammer

755 *A Profitable Tool with Many Uses* is the key line of a new bulletin issued by Barco Mfg. Co. It describes applications of the company's portable gasoline-powered hammers in the utility, telephone, municipal, military, factory maintenance, and general construction fields. Among the products of this company are the Barco hammers and drills which are self-powered. For a copy of the Bulletin No. 613, write BARCO MFG. CO., 1801 WINNEMAC AVE., CHICAGO 40, ILL.

Service, Valve, Roadway Boxes

756 Service, valve, and roadway boxes are described in this new bulletin. The manufacturer, whose booklet with the use of diagrams explains its types of equipment, also will furnish new designs for special purposes. The bulletin may be obtained by writing OPELIKA FOUNDRY CO., INC., OPELIKA, ALA.

Police Motorcycles

757 Harley-Davidson police motorcycles provide cities with dependable, efficient mounted police service. Among their features are easy steering and oil-cushioned riding comfort. For a copy of the booklet, *More Effective Police Power*, write HARLEY-DAVIDSON MOTOR CO., MILWAUKEE 1, WIS.

Equipment for Sewage And Waste Treatment

758 Walker process equipment for handling and treating solids-in-liquid combinations, water treatment, industrial liquids, and sewage and waste treatment, is described in *Bulletin No. G50*. It reports on the Carball function, Diffusair function, tractor drive collector, rectangular collectors, as well as circular and rectangular clariflows. *Bulletin* 22S60 describes the downdraft type aerators for activated sludge plants. Copies of the literature may be obtained from WALKER PROCESS EQUIPMENT INC., AURORA, ILL.

Barrier-Beam Guard Rail

759 *USF Barrier-Beam Guard Rail* is the subject and title of a booklet published by United Steel Fabricators. The publication contains photographs of typical guard-rail installations, complete engineering data and drawings, erection instructions, specifications, and curving data. The manufacturer states that the USF barrier-beam guard rail provides all the requisites of a practical guard rail—good visibility, high deflection ability, heavy impact resistance, continuous-beam strength, ease of erection and maintenance, and overall low cost For a copy of booklet, write HIGHWAY PRODUCTS DIVISION, UNITED STEEL FABRICATORS, INC., WOOSTER, OHIO.

Fire Fighting Equipment

760 The Ranger is a mobile 500 gpm triple combination pumper complete on 4-WD Willys truck chassis. It can be employed for municipal and volunteer fire departments, oil and gas industries, plants, and airports, among others. Some of its features include: 500-gallon centrifugal pump complete with tachometer, suction, and discharge gauges; 150-gallon tank, and heat exchanger cooling system for continuous pumping. Descriptive folder may be obtained from MOBILE FIRE APPARATUS, INC., 960 N. PENNSYLVANIA ST., INDIANAPOLIS 4, IND.

Better Calculating And Typewriting

761 Two distinctly modern office appliances are the printing calculator, which computes and prints answers on a tape, and the electric typewriter, which makes up to 20 carbon copies. A new booklet illustrates the work of this team and the familiar municipal office operations which each machine performs efficiently. Write for *Paired to Cut Costs* from REMINGTON RAND INC., 315 FOURTH AVE., NEW YORK 10, N. Y.

For Better Playgrounds

762 Winter is a good time to review the playground situation, and here's a booklet that will help. It gives points on care, planning, and selection of types of apparatus. Obtain your copy of *Planning Your Playground* from THE J. E. BURKE CO., BOX 986, NEW BRUNSWICK, N. J.

Law Enforcement Equipment

763 Law enforcement equipment made by Federal Laboratories, Inc., includes a tear gas kit to provide tear gas equipment for handling serious emergencies. Supplies include: a gas gun, Flite Rite projectiles, Spedeheat projectiles, short-range cartridges, parachute flares, and Spedeheat grenades. Other products of this concern are also described in a catalog which may be had from FEDERAL LABORATORIES, INC., 8756 SOUTH STATE ST., CHICAGO 19, ILL.

Centrifugal Pumps

764 Portable self-priming centrifugal pumps are described in Bulletin 52 issued by this manufacturer. The Rice Model 7-M self-priming pump has a capacity of 115 gallons per minute, while Model 10-M is the largest of the 2-inch series. Other models include: 15-M, 3-inch size for users needing extra capacity; 20-M with capacity of 333 gallons per minute; 30-M available in 30,000 and 40,000 gph capacities, and 40-M the largest of the 4-inch series. For literature, write RICE PUMP & MACHINE CO., GRAFTON, WIS.

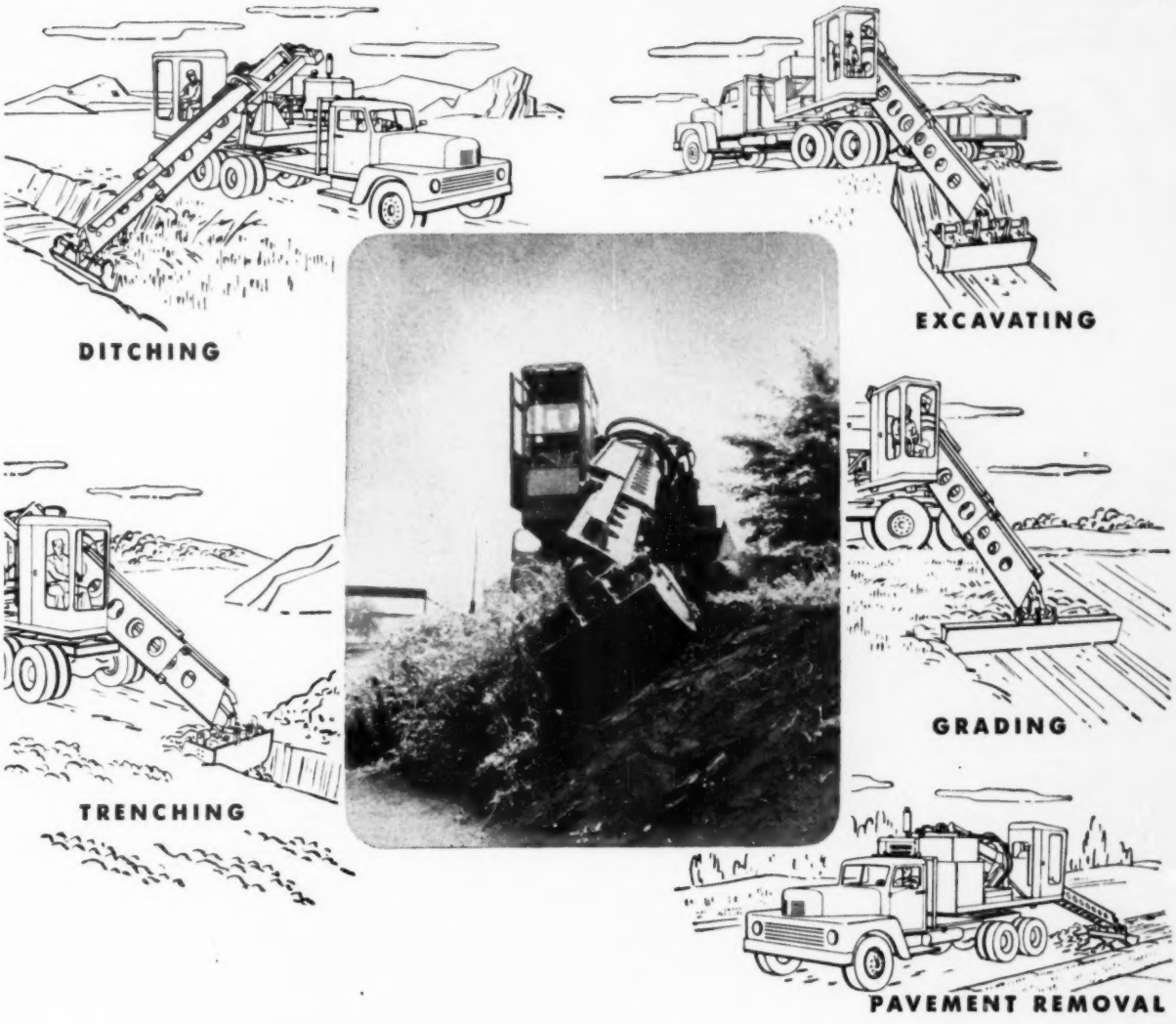
For Sewer and Water Pipe Cleaning

765 Sewer and water pipe specialists, this company restores the pressure and original capacity of water mains up to 95% by removing chemical and solidified deposits, tuberculations, and algae. For sewer pipe, it saves from 60 to 80% on pipe cleaning costs with 100% efficiency by cleaning roots, sand, gravel, rocks, hard grease or other debris completely from any size sewer pipe, storm drain, catch-basin or road culvert. Further details may be had by writing ACE PIPE CLEANING CONTRACTORS, INC., 2003 INDIANA AVE., KANSAS CITY, MO.

Lets Welders Thaw Pipes Safely

766 The Linc-Thaw is a new protective device that will give an engine-driven welding macine protection from overload damage when the machine is being used to thaw frozen water pipes. It is designed in several ratings for operation with Lincoln Shield-Arc engine-driven welders of 200, 300, and 400 ampere capacity. For literature, write THE LINCOLN ELECTRIC CO., CLEVELAND 17, OHIO.

(Please turn to page 36 for more Literature)



Why buy 5 machines when 1 Gradall does all these jobs?

YES, ONE GRADALL with its unique *arm-action* and *controlled down pressure* handles these and many other jobs with cost-cutting speed. At the same time it eliminates costly hand labor.

And you'll keep your Gradall busy! When it's finished with one job, you can quickly interchange any of a number of attachments and the Gradall is ready for its next job.

So before you invest in *any* one-purpose earth-moving machine it will pay you to investigate the profit possibilities of the Gradall. See your Gradall Distributor for a field demonstration.

Gradall
DIVISION OF WARNER & SWASEY Cleveland
PRECISION MACHINERY SINCE 1880

Gradall Distributors in over 75 principal cities in the United States and Canada

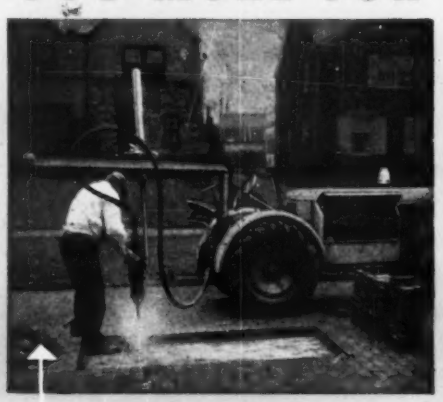
YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS WITH WARNER & SWASEY MACHINE TOOLS, TEXTILE MACHINERY, CONSTRUCTION MACHINERY

LE ROI

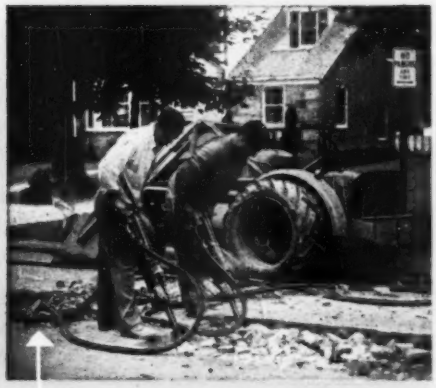
TRACTAIR

LE ROI GIVES YOU MORE FOR YOUR MONEY

Hydraulically-operated Back Hoe — Tractor-compresser-back hoe combination offers big savings on digging jobs too small for power shovels, too big to be done economically by hand labor. Bucket sizes, 12" to 22". Digging depth, 6' to 7'. Swing, 60° each side of center.



Le Roi-CLEVELAND Patcher mounts on rear platform of Tractair. Drills closely-spaced holes within 7-foot radius, then breaches the section of pavement loose for easy removal. On this job, the bricks were removed first to get to the pavement underneath.



Pavement Breaking — Tractair puts air power to work running Le Roi-CLEVELAND Breakers. When the breaking job is done, Tractair mops up with its front-end loader. Tractair can be used also to run Le Roi-CLEVELAND sinker drills, clay spades, backfill tampers.

with Mobildrill

on railroad siding job gives more than twice former footage for less than half equipment cost

As much as 750 feet of hole daily, where only 300 feet were drilled before! More than double the production of three hand-held sinkers and a 315 cfm compressor! Substantial savings on both fuel and equipment costs! That's the remarkable record of a Le Roi Tractair Mobildrill on the Coal River Mining Company's development of a railroad siding at their strip mine in Nellis, West Virginia.

Tractair Mobildrill is a light-weight Le Roi-CLEVELAND wagon drill unit mounted on Tractair — a combination 35-hp tractor and 105-cfm compressor. One man can drive the Tractair Mobildrill and handle every phase of drilling — vertical and horizontal holes at any angle and any elevation up to 12'. Swinging boom permits drilling 4-6 holes of a pattern from one spot.

The Mobildrill attachment is just one example of how Tractair's versatility pays off in lower costs and minimum investment in special equipment. The usefulness of Tractair can be multiplied by using Le Roi-CLEVELAND air tools for breaking pavement, clay digging, tamping fill. Tractair also can be used for loading, lifting, backfilling, snow-plowing, etc., when equipped with a front-end loader and special attachments.

Prove this to yourself. Watch a Tractair at work. Make arrangements with your nearby Le Roi distributor. Write today for job-data sheets and bulletins on Tractair.

LE ROI COMPANY

MILWAUKEE 14, WISCONSIN

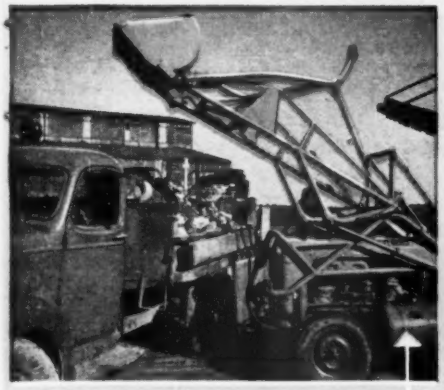
PLANTS: MILWAUKEE • CLEVELAND • GREENWICH, OHIO

Distributors in all these principal cities

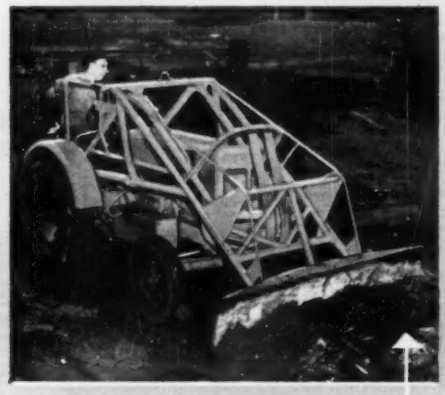
ALABAMA: Birmingham, Mobile — ARIZONA: Phoenix — ARKANSAS: Little Rock — CALIFORNIA: Bakersfield, Long Beach, Los Angeles, San Francisco—COLORADO: Denver, Grand Junction — CONNECTICUT: Hartford — FLORIDA: Jacksonville, Miami, Tampa — GEORGIA: Augusta, Decatur—IDAHO: Boise, Idaho Falls, Twin Falls—ILLINOIS: Chicago—INDIANA: Indianapolis—IOWA: Cedar Rapids, Des Moines, Waterloo—KANSAS: Great Bend, Kansas City, Pratt, Wichita—KENTUCKY: Lexington, Louisville—LOUISIANA: New Orleans, Shreveport — MAINE: Augusta — MARYLAND: Baltimore, Hyattsville — MASSACHUSETTS: Hyde Park, Newton Highlands, Worcester—MICHIGAN: Detroit, Grand Rapids—MINNESOTA: Duluth, Minneapolis — MISSISSIPPI: Jackson — MISSOURI: Joplin, St. Louis — MONTANA: Billings, Great Falls, Kalispell, Missoula — NEBRASKA: Omaha — NEW HAMPSHIRE: Manchester — NEW JERSEY: Cranford, Kingston — NEW MEXICO: Albuquerque — NEW YORK: Albany, Binghamton, Buffalo, Long Island City, Newburgh, Rochester, Saugerties, Syracuse, Whitesboro, Woodside (L.I.) — NORTH CAROLINA: Charlotte — OHIO: Cincinnati, Cleveland, Columbus, Dayton, Toledo — OKLAHOMA: Oklahoma City, Tulsa — OREGON: Portland — PENNSYLVANIA: Bethlehem, Harrisburg, Philadelphia, Pittsburgh — RHODE ISLAND: Providence — SOUTH CAROLINA: Columbia — SOUTH DAKOTA: Rapid City, Sioux Falls — TENNESSEE: Chattanooga, Knoxville, Memphis, Nashville — TEXAS: Dallas, El Paso, Houston, Lubbock, San Antonio — UTAH: Salt Lake City — VIRGINIA: Richmond, Roanoke — WASHINGTON: Seattle, Spokane — WEST VIRGINIA: Clarksburg, South Charleston — WISCONSIN: Milwaukee — WYOMING: Casper

T-38

MORE UTILITY! MORE PROFIT!



Loading — Front-end loader can be attached to Tractair in only a few minutes. Boom combines bucket and crane. Crane folds back out of way when not in use. Bucket holds 10½ cu. ft. — lifting capacity is 1000 lbs. Lifting capacity of crane is 800 lbs.



Backfilling — Replacing the bucket on the loader with a backfill blade adds to the variety of jobs a Tractair can handle. Backfill blade is 6' wide, mold board is 2'8" high. Maximum lift above ground is 1'4".

Trac-Jac — A Le Roi-CLEVELAND air-feed sinker drill mounted on a Tractair. Feeding and drilling controls are within easy reach of operator. The mobility of this unit makes it ideal for mud-jacking and many other applications.

EVENLY MATCHED...

for purpose and quality

BADGE and CROWN, both are prized possessions, yet standards of value are measured in different ways. To the king his crown is a possession of untold value and historical significance. To you, your badge is without question a prized possession that reflects personal achievement for you. Your badge has a special meaning to you — it stands for honesty, authority, and devotion to duty.

If your badge is a BLACKINTON BADGE you realize true quality and you know that your badge is the finest. But if you are one of the few not wearing a BLACKINTON BADGE you've missed a lot in personal satisfaction. Ask to see BLACKINTON BADGES the next time your equipment supplier calls. He will gladly show you the true quality and outstanding appearance of BLACKINTON BADGES.

BLACKINTON BADGES sparkle with quality.

BLACKINTON

V. H. BLACKINTON & CO., INC., ATTLEBORO FALLS, MASS.

Blackinton Police and Fire Badges are sold throughout the United States and Canada, exclusively through authorized equipment suppliers.

More Literature

Write direct to the manufacturers or use coupon on page 24

Paving Breakers

767 Joy paving breakers are available in several models. The K-89 is heavyweight for heavy reinforced concrete sections. The K-81 handles tough demolition jobs. Other equipment made by this concern are compressors, rock drills, wagon and core drills, hoists, spaders, and trench diggers. Get bulletins from JOY MFG. CO., HENRY W. OLIVER BLDG., PITTSBURGH 22, PA.

Chemical Proportioning Pumps

768 A new bulletin recently released gives information on the heavy-duty Chem-O-Feeder. These small proportioning pumps, available with one, two or three measuring chambers for capacities up to 57 gph, are supplied as a package, making installation extremely simple. Bulletin No. 1225 gives specifications, features, installation diagrams, and a list of chemicals fed. For a copy write %PROPORTIONEERS%, INC., PROVIDENCE 1, R. I.

Water-Repellent Coating

769 The newest development of the Horn Research Laboratories is Dehydratine No. 22, a silicone water-repellent coating which uses the principle of negative capillarity. Pores of concrete, stucco, and masonry become effectively water repellent when treated with this agent. It is acid and alkali resistant. For descriptive booklet, write A. C. HORN CO., INC., LONG ISLAND CITY 1, N. Y.

Guide to Selection Of Centrifugal Pumps

770 *Handy Guide to Selection of Centrifugal Pumps* is the title of a new publication issued by Allis-Chalmers. It covers general purpose, double suction, multi-stage, special purpose, marine and mixed and axial flow pumps. Special purpose pumps mentioned include solids handling, paper stock, sewage, rubber-lined, process, fractional horsepower and coolant and circulating units. For a copy of the guide, Bulletin 52C6059J, write ALLIS-CHALMERS MFG. CO., 1185 S. 70TH ST., MILWAUKEE 1, WIS.

Pumps for Varied Usage

771 Marlow pumps are employed in agricultural, construction, municipal and petroleum fields, as well as for sprinkler irrigation, general industrial work, and waste disposal. Bulletin G-52 covers the complete line. Designed as a review and reference bulletin, it contains pictures of representative units and general descriptive matter covering each type of Marlow pump. Copies may be obtained from MARLOW PUMPS, RIDGEWOOD, N. J.

Boltless, Clamp-On Pipe Connection

772 An unskilled workman can place this new boltless, utility-clamp pipe tap, and the connection will stand pressures as high as 1700 psi. Learn about this by writing for literature from THE COREY SALES CO., LOS ANGELES, CALIF.

Folding Tables, Chairs and Benches

773 For the numerous special municipal meetings and for elections, light folding furniture is most suitable. Even the roomy tables, 4 by 6 feet or 3 by 10 feet, weigh under 100 pounds. They run from 3 by 3 feet to 4 by 8 feet and are fully described in a catalog available from THE MONROE CO., 99 CHURCH ST., COLFAX, IOWA.

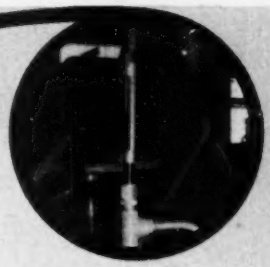
A job no other BLACK TOP PAVER can do!

THE increased use of asphalt on high-speed highway must tend toward better construction, greater smoothness and tighter, safer joints.

Continuous Course Correction, an Adnun feature, has always made Adnun laid roads smoother and the overlapping action of the Adnun Cutter Bar has always assured compact joints.

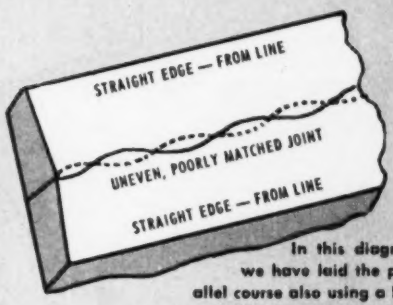
Now Adnun makes it possible to maintain absolute alignment of the course at the longitudinal joints with a perfect match regardless of the subgrade. The Adnun Fluid Level gives you scientific control of your road surface as it's laid. Your operator just watches the glass—the fluid tells him the course is level. The Fluid Level brings you the same ease of control as a carpenter level brings the carpenter. Study the diagrams at the right. They tell you the story.

Highway officials will find the Fluid Level a great asset to improving their roads. Insist that it be standard equipment on the pavers used in your State or County.

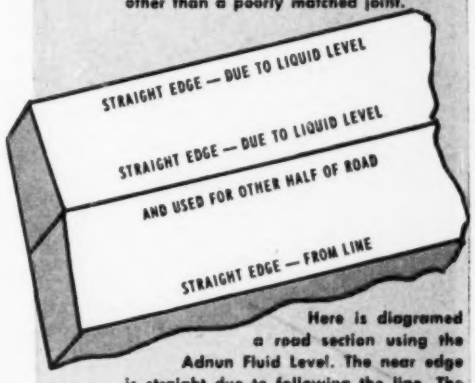


The Fluid Tells You The Course Is Level

Here is a section of half of a road in diagram. The outside edge has been laid by using a line. The edge at the center will assume the irregularities of the subgrade.



In this diagram we have laid the parallel course also using a line at the outer edge. As the center edge will also follow irregularities of the subgrade there is no hope for anything other than a poorly matched joint.


STRAIGHT EDGE — DUE TO LIQUID LEVEL
STRAIGHT EDGE — DUE TO LIQUID LEVEL
AND USED FOR OTHER HALF OF ROAD
STRAIGHT EDGE — FROM LINE

Here is diagramed a road section using the Adnun Fluid Level. The near edge is straight due to following the line. The center joint is true and matched true and the far edge is straight due to the Fluid Level.

ADNUN TRADE MARK REGISTERED

BLACK TOP PAVER

BLAW-KNOX

THE FOOTE COMPANY, INC.

Subsidiary of Blaw-Knox Co.

1904 State Street • Nunda, New York

A

• Here in this one box are the repair parts recommended for a city placing 1,000 meters in service. Individual parts as well as complete assemblies are interchangeable, in all meters supplied during the past 30 years.

Improvements have been made in the construction of parts and in metallurgy to improve operation and increase life. But parts remain fully interchangeable to save your dollars. American Meters are still the simplest with the fewest parts.

Ask for complete data.

BUFFALO METER CO.

2902 MAIN STREET, BUFFALO 14, NEW YORK

THIS IS *Carlon*

. . .*THE FIRST REAL PIPE THAT IS PLASTIC!

*"Here's a really new development—***CARLON** *plastic pipe. Because it eliminates all the problems of old-fashioned metallic piping, it offers distinct advantages which deserve our consideration."*

Men everywhere are recognizing **CARLON'S** superiority for many fluid and gas transmission applications. Here are the reasons:

- **CARLON** plastic pipe is guaranteed forever against rot, rust and electrolytic corrosion.
- Flexible . . . follows irregular ditch contours, curves around obstructions.
- Weighs only 1/8th as much as metal pipe.
- Easily handled and installed without rigging equipment.
- Furnished in lengths up to 400 feet . . . requires fewer fittings.
- Permanent installations made in a fraction of the time required for metal pipe . . . no special skill needed.
- Maximum service life despite severe conditions.
- Permanent full flow . . . no interior build-up.
- Molded plastic fittings permit quick positive connections . . . facilitate connection to established metal systems.
- Factory tested at greater-than-working pressures for more than 8 hours.

Buy the Pipe with the Stripe!

Write today for literature.

1003-CP

CARLON CP

CARLON PRODUCTS CORPORATION

Pioneers in Plastic Pipe

CANADA: Micro Plastics, Ltd., Acton, Ontario • EXPORT: H. E. Botzow, New York City

10300 MEECH AVENUE • CLEVELAND 5, OHIO

ACE FACTS!

REPORT FROM MUNICIPAL AND INDUSTRIAL OFFICIALS

SAVE ". . . amazed to find pipe cleaning only ¼ expected cost."

SERVICE "Your prompt action with mobilized equipment highly commendable." Anywhere, anytime.

SURE ". . . happy to say pipe efficiency restored to 100% effectiveness."

Call Collect, Write, Wire for Free Information or Estimates on Your Sewer or Water Main Problems. No Obligation!

The ACE-method fits every pipe-cleaning budget! No expensive equipment to purchase or maintain. Lower underwriters' fire insurance rates. No repeated service calls by maintenance crews. Plant pumping costs reduced.

Facts prove old pipe should be rehabilitated before adding new extensions.

The famous ACE-method effectively cleans water and sewer pipes with modern equipment and technical "know-how" teamed with vast experience. Let ACE show you! Write for our 21-minute sound movie showing ACE crews in action.

WRITE TODAY FOR THE FREE ILLUSTRATED FACTS!

ACE PIPE CLEANING CONTRACTORS, INC.

Sewer & Water Pipe Specialists
HOME OFFICE
3513 East 18th St. Kansas City, Mo.
Phone Chestnut 2891
Offices in Principal Cities

Originators of the ACE-method.

PORT-A-PONY
FEATHERWEIGHT PORTABLE
PIPE THREADER

Here is a power pipe threader you can carry to the job in one hand. Weighing only 26 lbs., Port-A-Pony offers efficient pipe and conduit threading on all installation and maintenance work. You'll like the way Port-A-Pony threads any ¼" to 4" pipe on the job. The ½ hp reversible motor operates on 110V, AC or DC. Use your present die stocks.

Write for full information today.

THREAD-EZY MFG. CO.
336 N. SHIAWASSEE ST.
CORUNNA 2,
MICHIGAN

Newest, Most Beautiful Hotel in **MIAMI**

The ultimate in modern design for luxurious living. All rooms have individually controlled air-conditioning, radio, circulating ice water.

Combination sleeping and sample rooms. Sales meeting rooms and convention facilities available.

Convenient to shopping, night clubs, air line terminal, fishing and all activities. Write us today.

WILLIAM F. USHER MANAGER

BISCAYNE *terrace* HOTEL

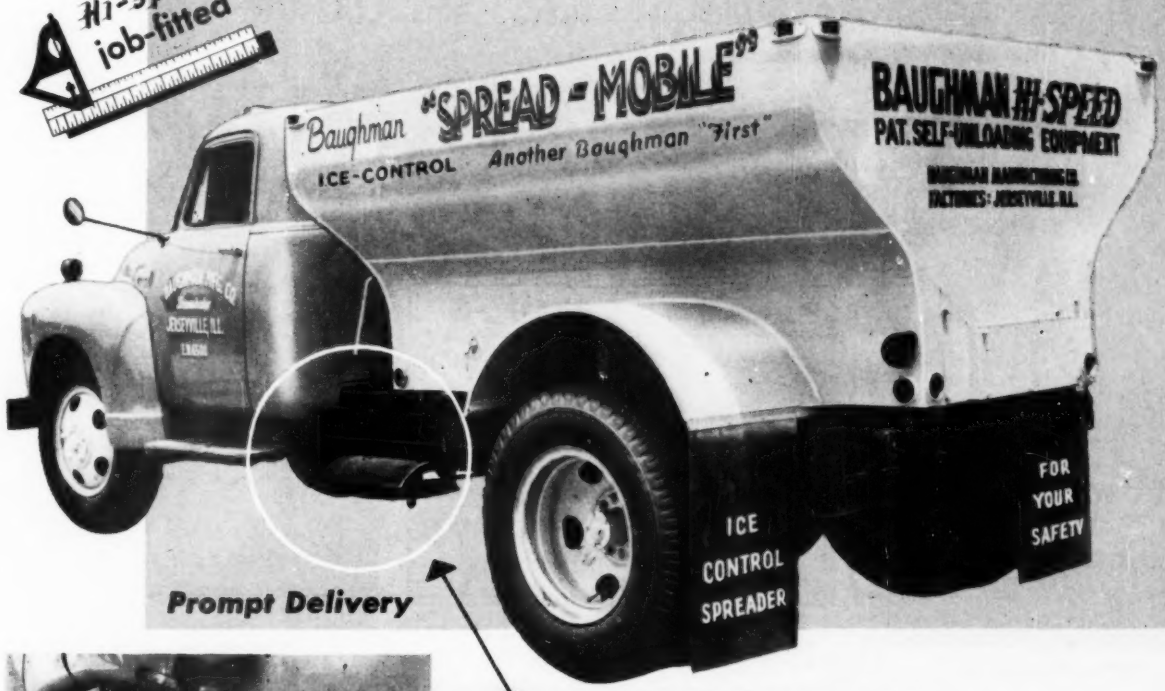
340 BISCAYNE BLVD.

MIAMI
FLORIDA

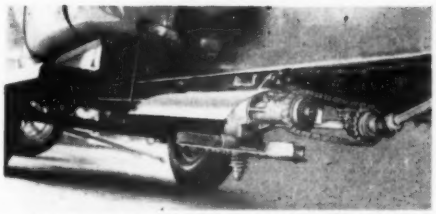
the greatest advancement in **ICE-CONTROL** *history!*

BAUGHMAN SPREAD-MOBILE

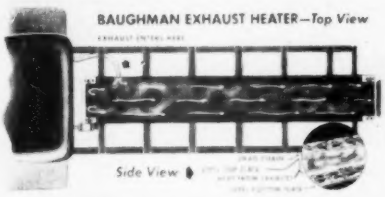
Hi-Speed job-fitted



Prompt Delivery



Note low position of distributor above road and cab-adjusted safety baffle.



Top view showing how exhaust is utilized to heat conveyor and contents of body.

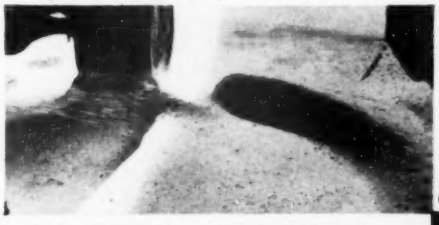


Photo of spread pattern. Note how thoroughly material is spread under rear wheels.

Write for Bulletin A-370 today!

1 REVOLUTIONARY CENTER-SPREAD DESIGN
Spreads from *left center* of chassis—not rear of body. Spreads *ahead of rear* wheels, assuring far better traction.

2 EXCLUSIVE EXHAUST HEATER PREVENTS FREEZING
Motor exhaust, channeled through patented chamber under full length of body, heats both conveyor and load — prevents freezing, helps material penetrate ice.

3 ONE-MAN OPERATION—COMPLETE CAB CONTROL
All controls located at driver's seat, including chain and flight conveyor, running from rear to front of body, spreader and adjustable "safety baffle" controls.

4 IMPROVED, ROAD-HUGGING SPREAD PATTERN
Lower distributor sprays material down on road, any area from 10 to 40 feet wide; greatest spread left of truck to cover entire highway.

5 SAFETY BAFFLE PROTECTS PASSING CARS
Deflector can be automatically lowered from cab.

6 ATTRACTIVE NEW STREAMLINED BODY LINES
Body and supports are completely sheathed in smooth, rounded sheet steel—no corners or ledges—thus insuring self-unloading.

7 SPREADS ANY HIGHWAY MAINTENANCE MATERIAL
Sand, Cinders, Salt, Chips, Chat, Calcium Chloride, Gravel. Body can be reversed for oil blotting, for better skid proofing.

Keep your roads SAFER at LOWER COST with the new Baughman SPREAD-MOBILE . . . the latest word in ICE-CONTROL!

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manufactured exclusively by

BAUGHMAN MANUFACTURING COMPANY

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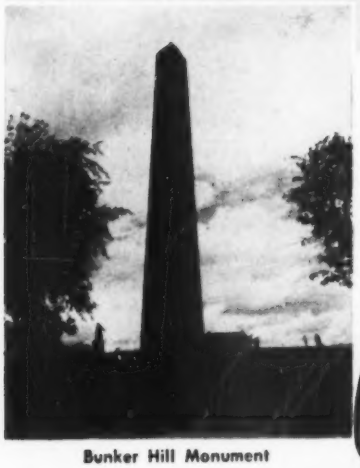
Join Your Friends and Associates at the

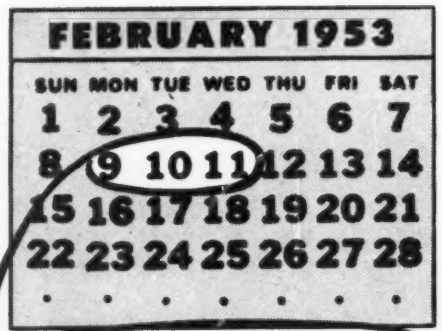
1953 ANNUAL MEETING
AMERICAN ROAD BUILDERS' ASSOCIATION
IN

HISTORIC BOSTON

February 9-11, 1953 **HOTEL STATLER**



Bunker Hill Monument



It's YOUR Business They'll Discuss—
Make It YOUR Business to Be There

U. S. S. Constitution—"Old Ironsides"

LEARN what's new in road building, maintenance and administration. **HEAR** nationally known speakers. **PROFIT** from technical papers and reports—panel sessions and discussions—technical committee meetings. **ENJOY** a program with kindred topics staggered —no need to miss something you want to hear. Meet old friends and make new ones!

Superb hotel accommodations in a famous city steeped in American tradition—an ideal convention set-up. Special entertainment for the ladies. Seven active ARBA divisions transacting divisional business. Generous "punctuality prizes." For hotel reservation blanks and ticket applications, apply to Washington Headquarters, American Road Builders Association.

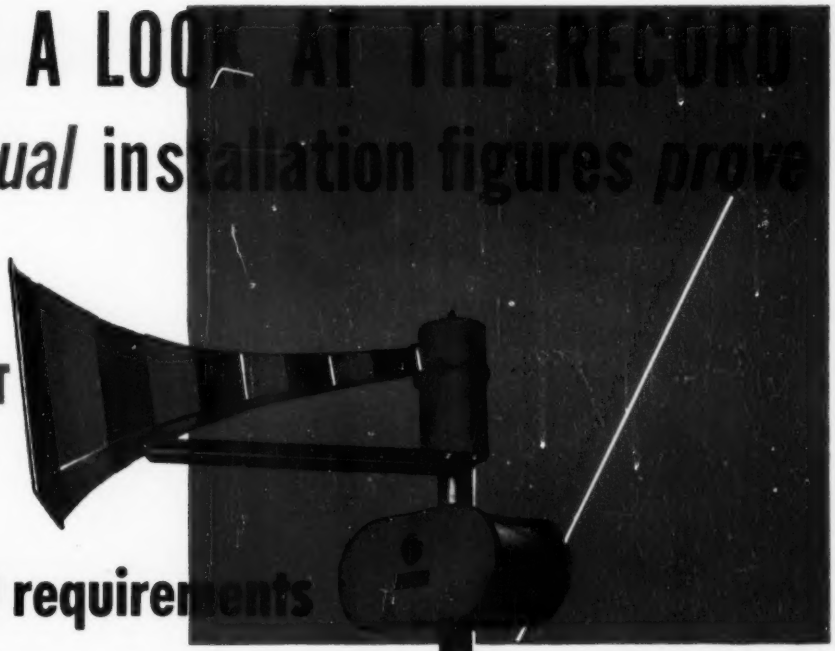
AMERICAN ROAD BUILDERS' ASSOCIATION

INTERNATIONAL BUILDING — WASHINGTON 4, D. C.

LET'S TAKE A LOOK AT THE RECORD

Actual installation figures *prove*

FEDERAL'S THUNDERBOLT SIREN



meets AIR RAID requirements

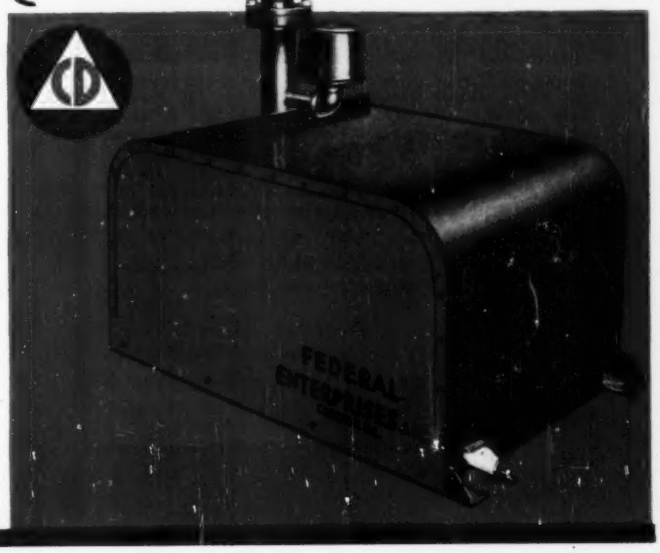
Best!

CHICAGO	24	THUNDERBOLT'S
YOUNGSTOWN & MAHONING COUNTY	18	THUNDERBOLT'S
CLEVELAND & CUYOHOGA COUNTY	17	THUNDERBOLT'S
WICHITA	12	THUNDERBOLT'S
BALTIMORE	11	THUNDERBOLT'S
DENVER	11	THUNDERBOLT'S
COLUMBUS	9	THUNDERBOLT'S
TACOMA	8	THUNDERBOLT'S
WINSTON-SALEM	8	THUNDERBOLT'S
KNOXVILLE	6	THUNDERBOLT'S
SEATTLE	6	THUNDERBOLT'S
NORFOLK	6	THUNDERBOLT'S
ST. PAUL	5	THUNDERBOLT'S
WRIGHT FIELD	4	THUNDERBOLT'S
LAKE COUNTY, OHIO	4	THUNDERBOLT'S
STEUBENVILLE	4	THUNDERBOLT'S
RICHMOND	3	THUNDERBOLT'S
ALBANY	3	THUNDERBOLT'S
MONTGOMERY	3	THUNDERBOLT'S

After investigating every possible type and size of warning signal, these cities have selected Federal sirens for air raid protection. Actually, this is but a part of over 200 cities that have installed or have ordered Federal sirens, and new names and additional orders are coming in daily.

These ACTUAL installations are proof, not talk! It's no accident that so many leading cities have arrived at the conclusion that Federal sirens are outstanding in performance, economy and dependability.

When it comes to planning protection SO VITAL to your community's welfare, you can have no better guide than the experience of so many other cities. Call your Federal representative now!



FEDERAL ENTERPRISES, INC.

Formerly: Federal Electric Company, Inc.

●

8756 South State Street
Chicago 19, Illinois

221 TRENCHLINER DIGS 8½′ DEEP 16 TO 36″ WIDE . . .

For wider, deeper trenches, check Parsons 250 Trenchliner (above) . . . digs 16 to 42 in. wide, 12½ ft. deep, up to 9¾ ft. per minute. Bigger ladder-type 310 Trenchliner digs 18 to 54 in. wide at 17-ft. depth with single boom . . . and 6 ft. wide, 12 ft. deep with dual booms. Other Parsons Trenchliners include 2 wheel-types, full crawler mounted, and mobile, rubber-tired Trenchmobile®.

Send to: **PARSONS COMPANY,** Newton, Iowa

for bulletins on: ☐ 221 ☐ 250 ☐ 310 Trenchliners

NAME .....

TITLE .....

STREET .....

CITY, STATE .....

CP297AM

For city work, here's the handiest trencher you've ever seen . . . dodges poles, hugs curbs, undercuts sidewalks, makes vertical set-ins, loads trucks. What's more, you get 30 digging feeds up to 13¾ ft. per minute, 12 trench widths from 16 to 36 in., and depths to 8½ ft. with Parsons 221 Trenchliner.

Easy-in, easy-out "Tap-In" teeth assure maximum trench production at every depth, width, in all soils. Sloping ladder boom undercuts sidewalks, sewers and old mains . . . makes vertical set-ins flush with buildings, foundation walls. Boom is shiftable, digs within 10 in. of curbs, poles and buildings in narrow alleys and streets. Reversible spoil conveyor dodges side obstructions without swerving from grade line . . . shifts through machine by power in less than 1 minute, dumps to either side. Arc-type conveyor also reaches up 6 ft.-4 in. (8 ft.-2 in. with extension section) for loading trucks.

Get all the details on this versatile 221 Trenchliner from your Parsons distributor, or send for bulletin.

PARSONS HEAVY QUALITY PRODUCT

PARSONS *Trenchliners*®

(Koehring Subsidiary)

10-TON LIFT SERVICE

. . . with KOEHRING 35 M. P. H. 205 TRUCK CRANE

COMBINING heavy-lift capacity with high-speed, rubber-tired mobility, Koehring 10-ton Truck Crane is the most efficient answer for widely-scattered lifting and material-handling jobs around town. Where work requires frequent moves over pavement and through city traffic, this mobile Truck Crane rolls along at 30 to 35 m.p.h. speeds. There's no waiting for trailer, no loading delays. Hinged boom folds back for ample travel clearance, saving more time on every job-to-job move.

Maximum 85-ft. reach, with jib, and 10-ton lift capacity on rubber gives this heavy-duty Truck Crane plenty of operating stability to handle over-size clamshell and dragline buckets on a wide work range . . . quickly converts to ½-yd. shovel or hoe . . . also available on crawler mounting.

Other Koehring Heavy-Duty sizes up to 79½-ton lift . . . 2½-yd. dipper capacities. See your Koehring distributor for complete facts, or write to us for catalogs.

8'-9" OVER-HEAD LOADING

. . . with KWIK-MIX BITUMINOUS TOWER LOADER

NOW you can load bituminous mix into trucks, overhead hoppers, or stockpile with Kwik-Mix Tower Loader attachment. Available for both Kwik-Mix 10 and 14 cu. ft. Bituminous Mixers, it provides 7'-9" to 8'-9" discharge height . . . saves time and cost of overhead mixer installations on many jobs.

Big bucket holds full mixer batch, is raised by power, dumps automatically at top of tower. Bucket travel and discharge are completed while next batch is being mixed . . . no delay to mixer production. It is single lever controlled by mixer operator . . . mixer engine supplies the power. Tower Loader is quickly collapsed for ample travel clearance . . . is also available on Kwik-Mix 16-S and 11-S Dandie® Concrete Mixers for 9'-2" overhead loading.

Ask your Kwik-Mix distributor for the facts, or write us. Also check Kwik-Mix line of bituminous, 3½-S to 16-S concrete, tilting and non-tilting plaster-mortar mixers, and Moto-Bug® (power wheelbarrow).

KOEHRING Cranes

KOEHRING COMPANY, MILWAUKEE 16, WIS.
Subsidiaries: JOHNSON • PARSONS • KWIK-MIX

KWIK-MIX Mixers

KWIK-MIX COMPANY, PORT WASHINGTON, WIS.
(Koehring Subsidiary)

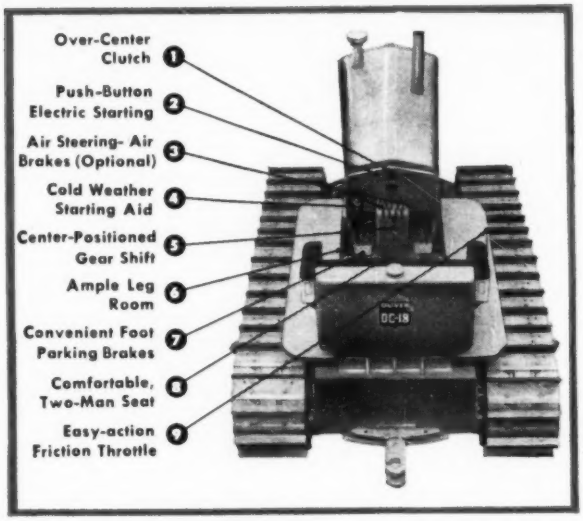
Owners' pride . . . Operators' delight
the NEW OLIVER "OC-18"

OWNERS can't say enough good things about the new Oliver "OC-18." They keep telling us how it does more work . . . how that full 133* drawbar horsepower gives it plenty of power for the really tough jobs . . . about its low operating and maintenance costs . . . and how the operators and mechanics like it.

OPERATORS are even more enthusiastic. It's the first big tractor they've found that is designed to make life easier for them. They tell us that toward the end of a long day on the "OC-18," they are much less fatigued, much more fit to continue giving top performance. The illustration shows clearly the 9 important "easy operating" features of the "OC-18." No other tractor boasts all these. They make the "OC-18" "the operators' dream come true."

Ask your Oliver Industrial Distributor to arrange a demonstration. Or if you prefer, write to The Oliver Corporation, 400 W. Madison St., Chicago, Illinois.

*OFFICIAL NEBRASKA TEST NO. 489


Over-Center Clutch 1
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Cold Weather Starting Aid 4
Center-Positioned Gear Shift 5
Ample Leg Room 6
Convenient Foot Parking Brakes 7
Comfortable, Two-Man Seat 8
Easy-action Friction Throttle 9
OC-18

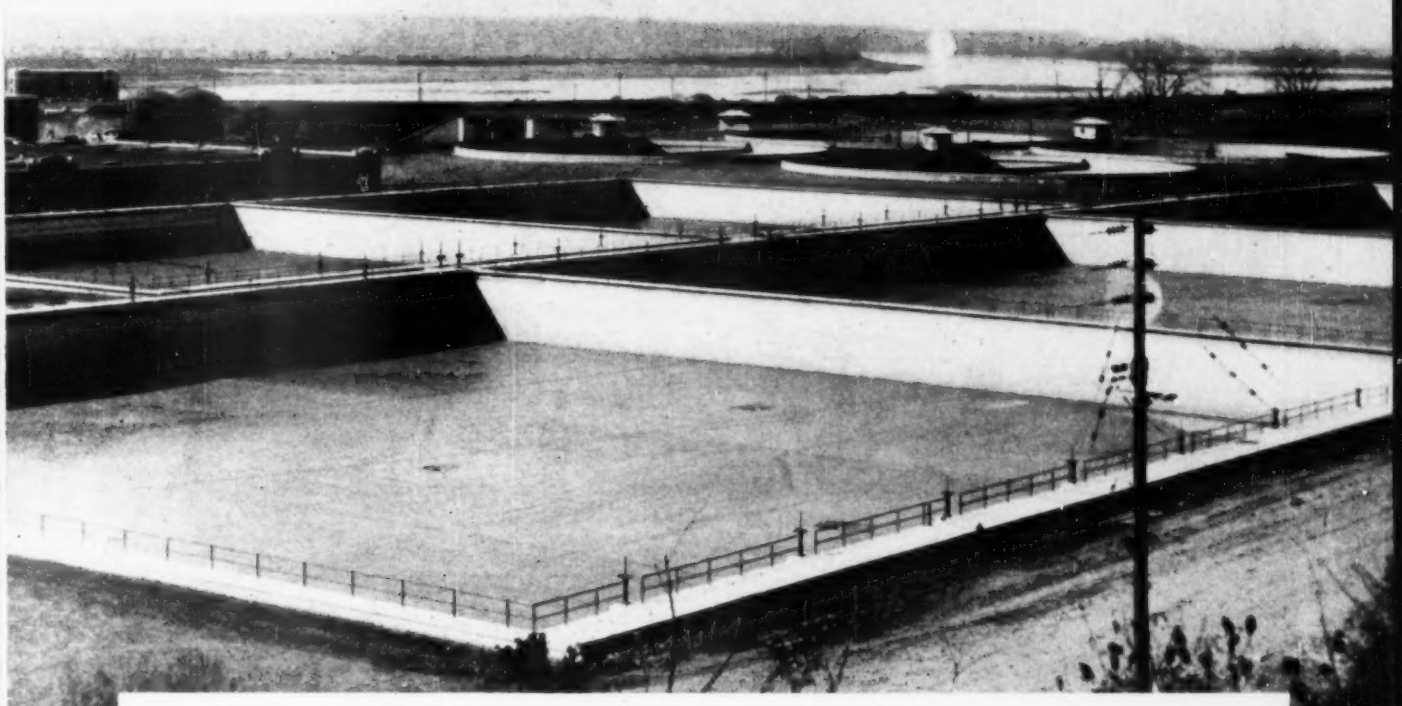
THE OLIVER CORPORATION

400 West Madison Street, Chicago 6, Ill.

A complete line of industrial wheel and crawler tractors

IN WATER AND SEWAGE PROJECTS

There's more to CORROSION than meets the eye



Sometimes VISIBLE... Often HIDDEN... Corrosion Strikes Every Installation

This year, the nation's water and sewage works will pay millions of dollars for needless losses created by corrosion... *yet much of this corrosion may never be discovered* until it's too late to protect—and time to pay!

Corrosion is readily detected as rust layers or failing paint on exposed surfaces. But, by far, the major costs of corrosion come from hidden areas—where only minute inspections and constant care can prevent costly failures.

YOU LOSE IN A "WAITING GAME"

Don't wait for rust or other visible signs to appear. Visible or hidden, corrosion will destroy costly equipment... increase maintenance costs... and contaminate vital water supplies, thereby creating needless wastes that will cost you thousands of dollars.

YOU CAN PREVENT NEEDLESS WASTE

Check now for corrosion's presence. Double-check areas that may be vulnerable to *hidden corrosion*. If you would like help, an AMERCOAT Field Engineer will gladly assist you in making a thorough analysis. There is no obligation.

What is AMERCOAT?

AMERCOAT is a method of corrosion control. Not just a single product, but a complete LINE of coatings, individually formulated to solve or control specific industrial corrosion problems.

FOLLOW THE LINE OF MOST RESISTANCE... PROTECT WITH *Amercoat!*

AMERCOAT CORPORATION

4809 FIRESTONE BLVD., SOUTH GATE, CALIFORNIA

CHICAGO, ILL. NEWARK, N.J. JACKSONVILLE, FLA. DALLAS, TEX.

CONNECTICUT

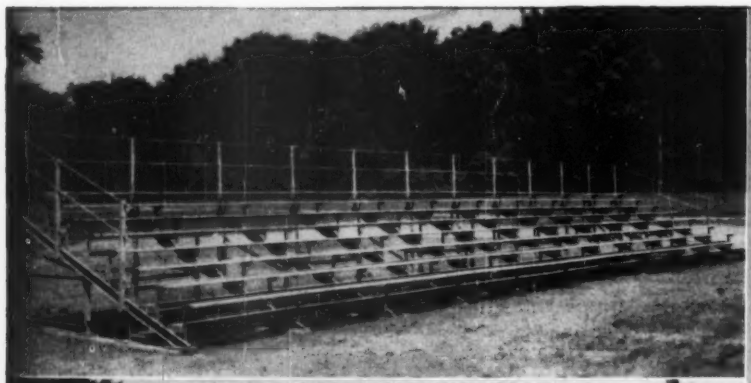
THE FIRST STATE IN THE NATION TO REPORT
ITS COMPLETE ELECTION RETURNS
NOVEMBER 4th, 1952

Uses

AUTOMATIC VOTING MACHINES IN ALL ITS ELECTION DISTRICTS

THE PRESIDENTIAL VOTE FOR THE *ENTIRE STATE* WAS UNOFFICIALLY TABULATED and REPORTED BY 10:00 P.M.

AUTOMATIC VOTING MACHINE CORPORATION
JAMESTOWN, NEW YORK



SNYDER
STEEL GRANDSTANDS AND BLEACHERS

Snyder Steel Stands are designed, engineered and constructed to insure safe seating so, when planning any installation regardless of size, specify Snyder Steel Stands. Estimate or help in planning available to you at any time without obligation.

For further information write:

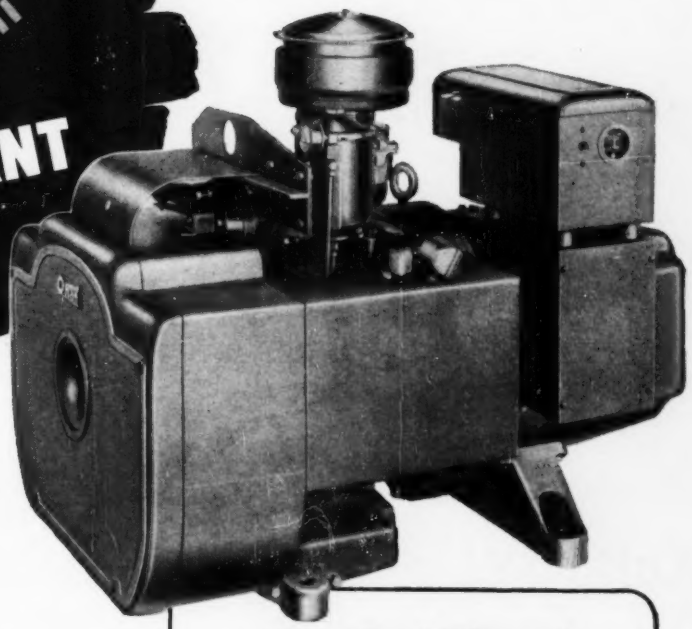
SNYDER TANK CORPORATION
P. O. Box. 14, Buffalo 5, N. Y.
P. O. Box 2390, Birmingham 1, Ala.

PORTABLE · SECTIONAL · PERMANENT

Take a good look at this New Powerhouse*!

THE ONAN "CW" *ELECTRIC PLANT

5,000 or 10,000 watts



LOWEST COST per kilowatt!

HIGHEST OUTPUT per pound!

MOST COMPACT!

Designed to fit every application better...
STANDBY, PORTABLE, MOBILE, STATIONARY

Whatever your need for electric power, the new Onan CW-5 or CW-10 give you top performance and value!

Here for the first time are 5 and 10KW electric plants powered by revolutionary new air-cooled engines, *designed and built by Onan exclusively for electric plant use!*

Both engines are 1800 R.P.M. The 13 HP Onan engine which powers the CW-5 and the 20 HP Onan engine used for the CW-10 weigh much less than general-purpose engines ordinarily used for electric plants of these capacities and are amazingly compact. Designed and built for heavy-duty use these engines deliver dependable, trouble-free service. Two-cylinder, alternate-firing, opposed design assures smooth, vibration-free power. New, quiet, highly efficient vacuum air cooling drives out *all* heated air through *one* side duct. The same duct carries exhaust gases, simplifying installation.

Impulse-coupled, high-tension magneto ignition for quick starting under all conditions. Both models in all standard voltages 60-cycle A.C., single or three phase.

Get the complete story of these all-new electric plants.

Far-Out-Front
in design and engineering

- *Twin-cylinder, horizontally-opposed, air-cooled, alternate-firing engines*
- *Aluminum-alloy cylinder heads*
- *Extra-large, replaceable bearings*
- *Full-pressure lubrication, 6 quart oil capacity, oil-filter*
- *Impulse-coupled, high-tension magneto ignition; radio suppressed*
- *Quiet, vacuum air cooling of generator and engine*
- *Excellent accessibility, snap-off air housings*
- *High performance generators*
- *Completely equipped with controls, instruments*

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Onan ELECTRIC PLANTS

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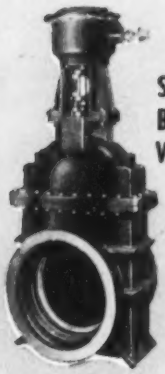
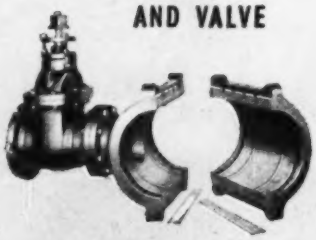


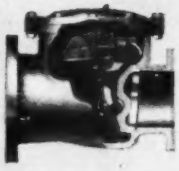
SQUARE BOTTOM VALVE

DOUBLE DISK VALVE



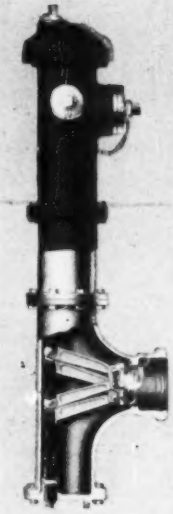
TAPPING SLEEVE AND VALVE

MOTOR OPERATED VALVE



CHECK VALVE

AIR VALVE



FIRE HYDRANT

Cutting Valve Costs for a lifetime

This interesting assembly consists of a 20 inch Rensselaer valve with reducing and increasing sections for installation in a 30 inch pipe line. The integral type gear case is designed for the working pressure of the valve and is packed with oil for lifetime service.

There is no need for a concrete vault for valves equipped with integral type gear cases. Just install valve boxes, shovel back the dirt and forget it, for this is the Rensselaer double disc valve with the well known wedge action. On closing, when the gates reach a position opposite their seats, the powerful wedging action presses them squarely and firmly against their seats. It is impossible to damage the stem threads or throw the stem out of alignment, and the gates open and close easily.

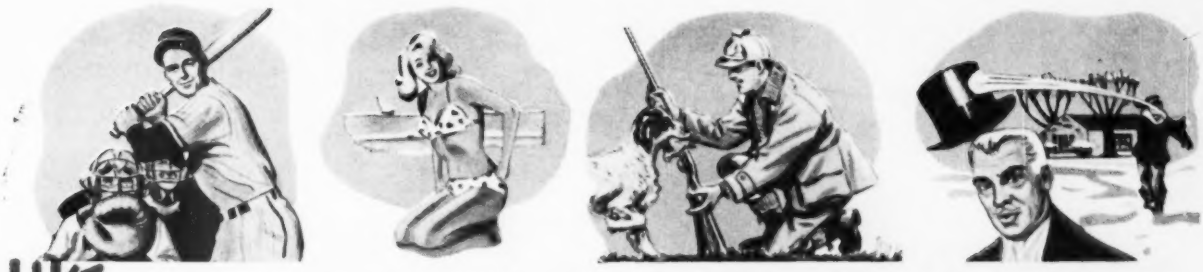
The valve you buy today should serve faithfully for many years. Why not provide maximum insurance against future maintenance costs by putting in Rensselaer valves in the first place?

Rensselaer VALVE COMPANY, TROY, N. Y.

GATE VALVES • FIRE HYDRANTS • SQUARE BOTTOM VALVES • CHECK VALVES • AIR RELEASE VALVES

A SUBSIDIARY OF NEPTUNE METER COMPANY 104

Sales representatives in principal cities



LIKE Spring and Baseball...Summer and Swimming...Autumn and Hunting...Winter and Snowballs

They Go Together All Year 'round

All Wheel Drive and All Wheel Steer

Yes, whether it's pulling a wet ditch, with the rear drivers up where the footing is good; or finishing a wide shoulder without leaving tire marks; or reaching out for a tremendous windrow and missing it with all wheels; or steering the rear wheels against the side thrust when widening out... whatever the season... whatever the job... All-Wheel Drive and All-Wheel Steer work together as a team... each making the other just that much more effective.

NO TWO WAYS ABOUT IT . . . an Austin-Western Power Grader goes places where ordinary motor graders cannot go... does things they cannot do... saves time and money on every job.

Austin-Western

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Road Rollers · Motor Sweepers

BALDWIN BLH LIMA-HAMILTON

Construction Equipment Division

Manufactured by
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Latest Permutit Precipitator Saves Up to 40% in Chemicals

Today's sludge blanket Precipitator is the most advanced and efficient type of coagulation, precipitation and settling equipment. It is particularly economical for the removal of turbidity, color, taste and odor; and for softening water, reducing alkalinity and removing silica by the cold lime-soda process.

The secret of its amazing efficiency and adaptability is the full utilization of the suspended sludge-blanket principle. Upward filtration through a blanket of previously formed precipitates results in the complete usage of lime and other chemicals . . . *saving up to 40%.*

Resultant prolonged and intimate contact prevents the formation of "after deposits" in filters and pipes, which in many cases . . . *eliminates the need for recarbonation.* And an effluent averaging usually less than 5 ppm turbidity is produced . . . *easing the load on filter beds.*

In addition to all these advantages, a one hour detention period gives the same results as 2 to 4 hours in the conventional type . . . *making for a more compact plant.*

For full information write to: THE PERMUTIT COMPANY, Dept. AC-1, 330 W. 42ND STREET, NEW YORK 36, N. Y. or to Permutit Co. of Canada, Ltd., 6975 Jeanne Mance St., Montreal.

P.S. Don't forget that Permutit can also provide tailor-made equipment to convert old conventional settling basins to the modern sludge-blanket Precipitator.

WATER CONDITIONING HEADQUARTERS FOR 40 YEARS

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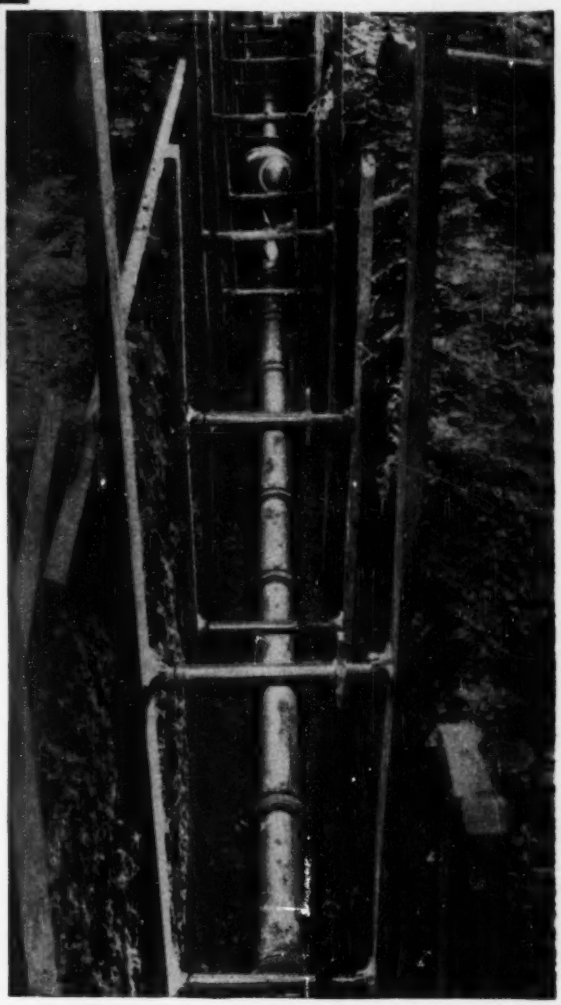
CLAY PIPE—*ESSENTIAL ★ ECONOMICAL ★ EVERLASTING*

Clay Pipe—381,000 feet of it—was used in this sewerage project northeast of San Jose, California, a residential area that mushroomed as defense workers poured into the area.



CLAY PIPE gets another 72-Mile Testimonial

Here's a testimonial 381,000 feet long, proving once again that Vitrified Clay Pipe is the time-tested material engineers and public officials depend on for sanitary sewerage. Thanks to their foresight, thousands of new homes in the San Jose district, as well as essential housing projects throughout the nation, will enjoy the *permanent* sanitary protection that only clay pipe can offer.

Vitrified Clay Pipe assures generations of trouble-free service. Acid sewage or alkaline soils can't corrode it . . . time can't weaken it. It's the only chemically inert sewerage material — *the only pipe that never wears out!*

NATIONAL CLAY PIPE MANUFACTURERS, INC.

1520 18th St. N. W., Washington 6, D. C.
206 Connally Bldg., Atlanta 3, Ga.
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703 Ninth & Hill Bldg., Los Angeles 15, Calif.
311 High Long Bldg., 5 E. Long St., Columbus 15, Ohio

Vitrified

CLAY PIPE NEVER WEARS OUT! PIPE

WHEREVER RELIABLE PERFORMANCE-PROVED PIPE IS NEEDED, SPECIFICATIONS CALL FOR VITRIFIED CLAY

South Bend, Ind. (Private Housing)	93,000 ft.
Tuscaloosa, Ala. (Municipal Expansion)	44,000 ft.
Evansville, Ind. (Municipal Expansion)	200,000 ft.
Detroit, Mich. (Jet Engine Plant)	28,000 ft.
Topeka, Kan. (Private Housing)	13,000 ft.
Tucson, Ariz. (Municipal Expansion)	38,000 ft.
Minneapolis, Minn. (Private Housing)	80,000 ft.

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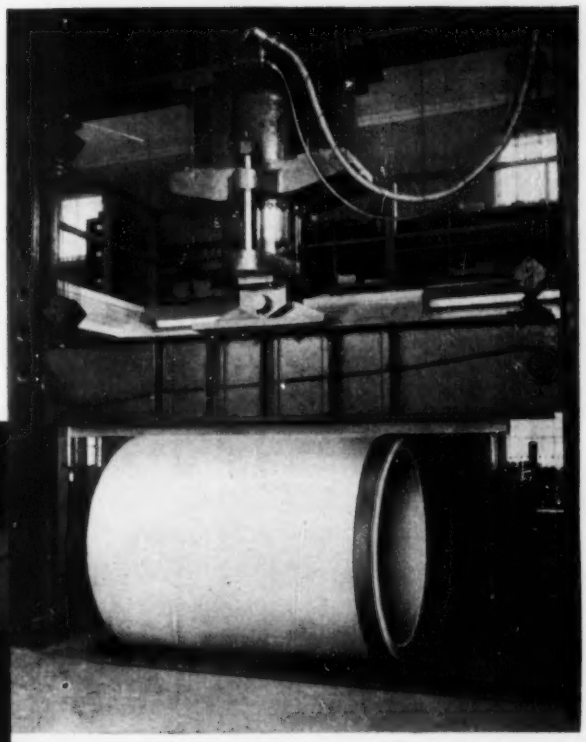
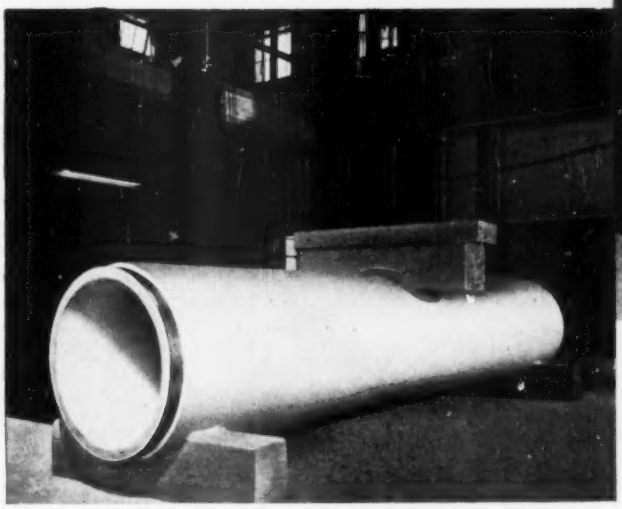
test after test assures the best

IN LOCK JOINT CONCRETE PRESSURE PIPE





▲ *Three edge bearing test in 300,000 pound capacity testing machine.*

◀ *Determining a pipe's beam strength in 300,000 pound capacity testing machine.*

Do you have conclusive proof of the fundamental characteristics of the pipe you intend using in your next water works project? Are you certain of its advantages? Do you recognize its limitations?

• • •

In Lock Joint's laboratory at Wharton, N. J. all guess work has been eliminated. Here, Lock Joint Pipes of all types and designs are tested to determine the exact extent of their ability to withstand back loads, beam loads and internal pressures. The most efficient modern equipment in the hands of highly trained personnel is used to give a tangible, practical demonstration of the high quality built into every type of Lock Joint Pipe.

• • •

These constant tests of our products are your assurance that, in its field, no finer pressure pipe than Lock Joint can be produced. Built in diameters from 16″ upward and designed for any pressure common to water works practice, these pipes will serve you unfailingly for generations.

SCOPE OF SERVICES—*Lock Joint Pipe Company specializes in the manufacture and installation of Reinforced Concrete Pressure Pipe for Water Supply and Distribution Mains 16″ in diameter or larger, as well as Concrete Pipes of all types for Sanitary Sewers, Storm Drains, Culverts and Subaqueous Lines.*

LOCK JOINT PIPE COMPANY

Established 1905

P. O. Box 269, East Orange, N. J.

PRESSURE PIPE PLANTS: Wharton, N. J., Turner, Kan., Detroit, Mich., Columbia, S. C.

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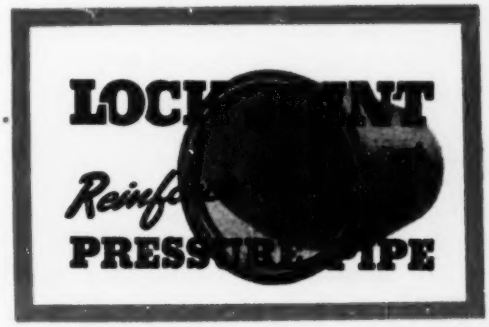
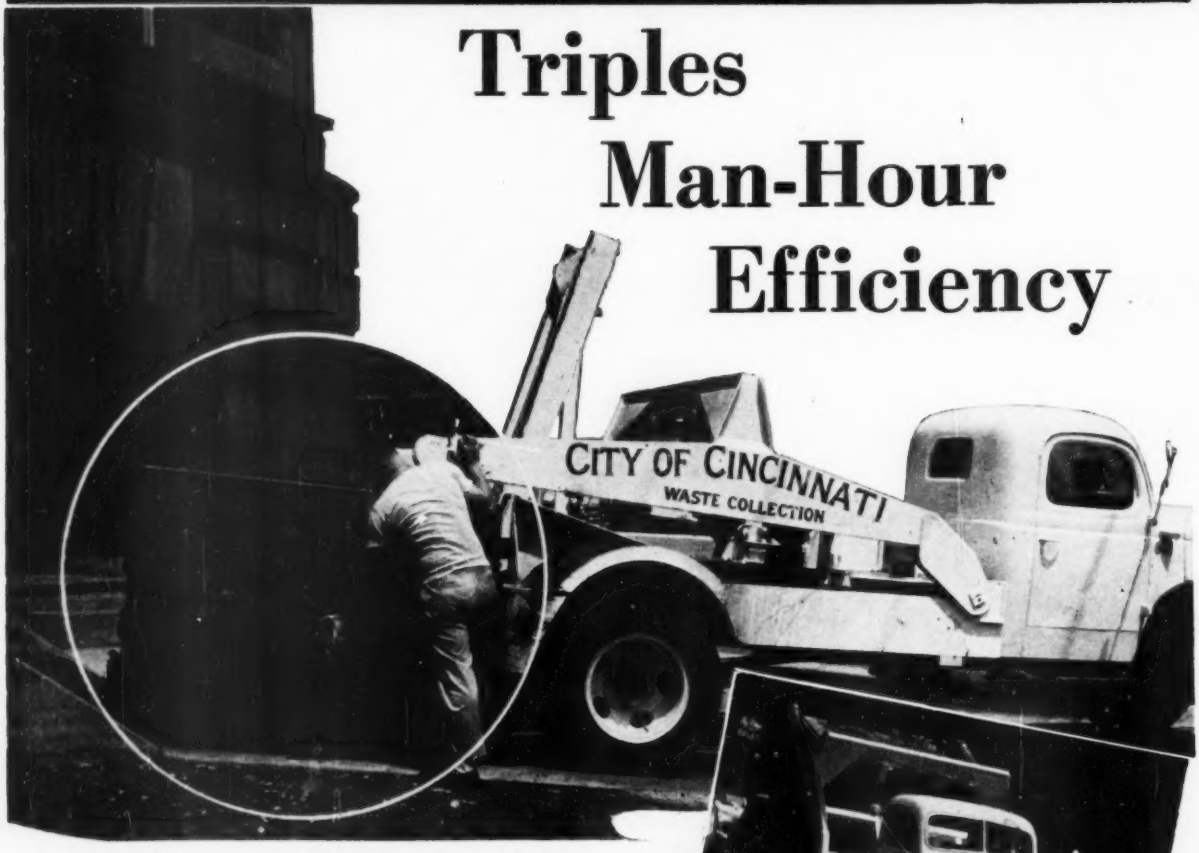


The DEMPSTER DUMPSTER® Rubbish Collection System

Triples Man-Hour Efficiency



A truck-mounted Dempster-Dumpster, with only one man, the driver, is constantly on the move servicing a multiple number of detachable containers, one after another. Container sizes range up to more than three times the capacity of the average dump truck body. They are spotted at accumulation points such as business establishments, schools, etc. and loaded by the user. On schedule the Dempster-Dumpster picks up each container, hauls to disposal area and automatically dumps the refuse by means of hydraulic controls in truck cab. Without question, the Dempster-Dumpster System is the most economical and efficient method of trash collection by truck ever devised. Manufactured exclusively by Dempster Brothers, Inc.

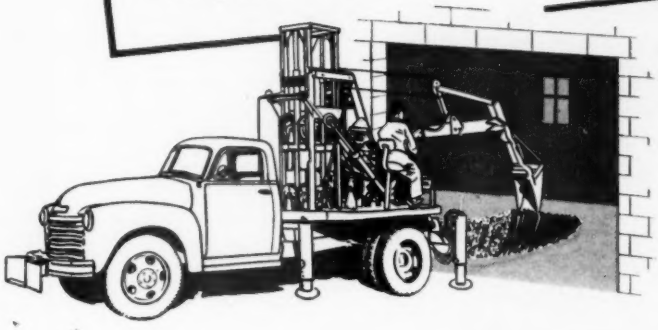
One Dempster-Dumpster Services All Containers . . . All Designs . . . All Sizes

Photos above show the Dempster-Dumpster System at work in Cincinnati, picking up, hauling and the start of dumping the bulky load from one of their 6 cu. yd. containers.

DEMPSTER BROTHERS, 813 Dempster Bldg., Knoxville 17, Tenn.

"SQUEEZE-IN SPECIALIST"

Bucyrus-Erie *Hydrohoe*



FOR close quarter trenching, pit digging, and other specialized excavating, the Bucyrus-Erie Hydrohoe is the stand-out performer. Here's why:

Here the Hyrohoe excavates a tank pit in a narrow lot on a busy corner. The Hydrohoe's ability to work in extremely close quarters often permits it to handle jobs that would normally require expensive hand labor.

1. Hydraulic outriggers permit less overall bulk per pound of lift.
2. With a shorter tail swing than any comparable unit, this compact dragshovel can maneuver in narrow alleys, enclosed lots, congested plants . . . operate where mechanized equipment would seem out of the question.
3. Hydraulic ejector pushes dirt out of bucket quickly, cleanly even without hoisting dipper to full dump position — another big help in close quarters.
4. Ability to retract telescoping boom makes it easy to duck under wires or tree branches — reach into confined spots, scoop up a load, and bring it out.

Outstanding close quarter performance is only one of many Hydrohoe advantages. It's quickly convertible to crane front-end in the field (owners report change-over in less than 2 man-hours), and its telescopic boom eliminates up to 40% of time lost moving up. Send coupon for full details.

BUCYRUS ERIE HYDROCRANE

DIVISION

SOUTH MILWAUKEE, WISCONSIN

BUCYRUS-ERIE HYDROCRANE DIVISION
South Milwaukee, Wisconsin

Gentlemen:

☐ Please send me Hydrocrane literature

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Your city—any city—has to have power to keep going. Power for a hundred purposes. And International equipment supplies it.

Brute, rugged International crawler tractors for wrecking, digging, building, for sanitary fill, for the heaviest snow-clearing jobs.

Handy, sturdy International wheel tractors for mowing, towing, sweeping, and lighter work of all kinds.

Reliable International stationary engines for everything from generating electricity to pumping water.

Ask your International Industrial Distributor for details on his complete line of power equipment. Ask him about his service facilities, too.

And wherever you go, keep an eye out for the big red IH machines. Wherever you see them, you know a good job of work is being done.

INTERNATIONAL HARVESTER COMPANY, CHICAGO 1, ILLINOIS

INTERNATIONAL **POWER THAT PAYS**

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SUPERIOR PERFORMANCE AND QUALITY

49-E MIDGET LEAK DET. ONLY $67.50

49-AB PIPE-FINDER ONLY $149.50

LEAK SURVEY UNIT 49-C ONLY $275.00

FREE 1952-53 CATALOG UPON REQUEST.

Fisher Research Laboratory, Inc.
PALO ALTO
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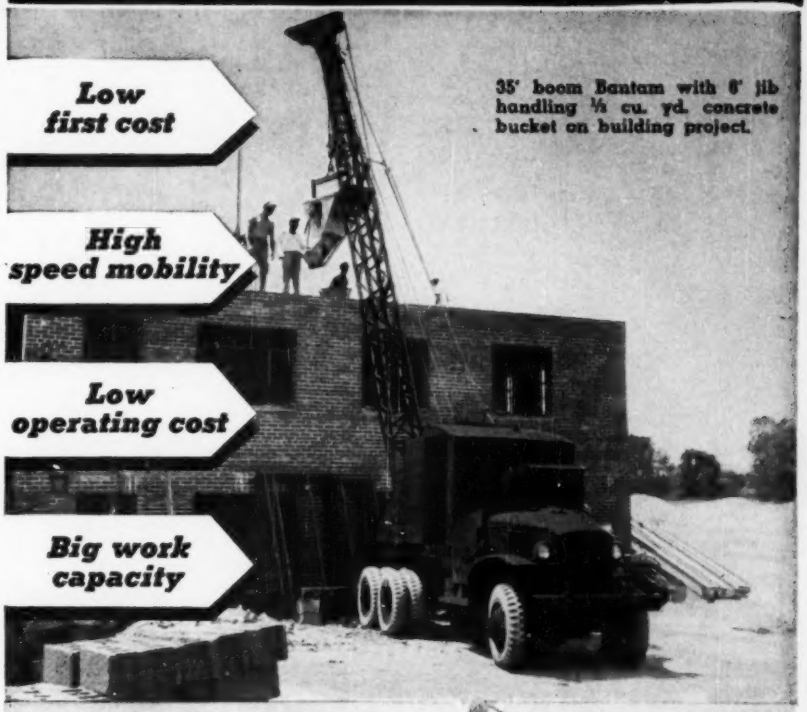
Let me tell you why

3500 Bantams®

enjoy owner preference



35' boom Bantam with 6' jib handling ½ cu. yd. concrete bucket on building project.

Bantam costs only a fraction of the price of bigger machines . . . goes anywhere in a hurry!

Thousands of satisfied Bantam owners will tell you no other machine at any price can match the speed and economy of a truck-mounted Bantam, for handling scattered or intermittent jobs . . . and even for production excavating and lifting, where frequent job moves are required. Mobile Bantam easily handles up to 10,000 lbs. . . . works with 50' boom . . . digs 100' of 5' trench per hr. as back hoe . . . loads up to 90 cu. yds. per hr.

Hoe digs to 14' depth without hand trim.

as shovel or dragline . . . can be equipped with low-cost magnet, clamshell, grapple, or 1400 to 2400 lb. pile driver for extra utility. See your Bantam Distributor for "on-the-job" proof, or write Schield Bantam Co., 234 Park St., Waverly, Iowa.

SB-CR-3R

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Cranes • Excavators

Get more jobs done at less cost

GOLDAK makes the world's finest LOCATORS

THE *Dualtronic* COMBINATION
PIPE & LEAK DETECTOR

The "Dualtronic" is acclaimed by Municipalities and Utilities throughout the world, because of the time and labor savings effected by one instrument doing the work of two so efficiently and effectively. Ruggedly built! Lightweight! One man operation! The "Dualtronic" is the answer how to cut costs 50%!

Lightweight! Rugged!

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PIPE LOCATOR

Guesswork eliminated. Pinpoint location of pipes, mains, gates, tees, etc. One man operation, total weight 11 lbs.! Strong, positive location signal guaranteed by Licensed circuits and Microtuning, exclusive with Goldak. Lasts a lifetime, guaranteed performance.

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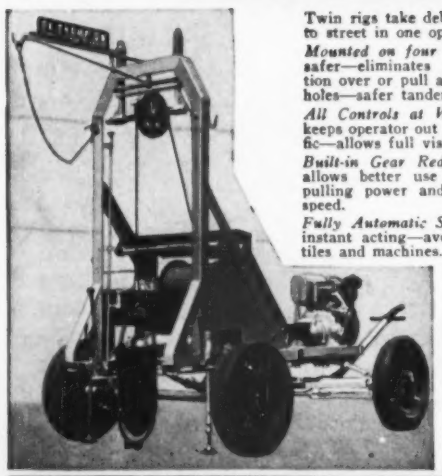
NEW IMPROVEMENTS
Cable Drum Clutch
Upper Arch Sheave
Automatic Cable Level Wind

OK CHAMPION Power Sewer Cleaner



Twin rigs take debris from sewer to street in one operation.

Mounted on four wheel trucks—safer—eliminates lifting to position over or pull away from manholes—safer tandem towing.

All Controls at Working End—keeps operator out of passing traffic—allows full vision of work.

Built-in Gear Reduction Ratio—allows better use of engine for pulling power and bucket travel speed.

Fully Automatic Safety Clutch—instant acting—avoids damage to tiles and machines.

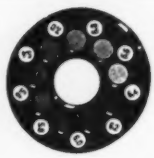
CHAMPION CORPORATION
Hammond, Indiana

SEND FOR LITERATURE

Champion Corporation, 4716 Sheffield Ave., Hammond, Indiana
Please send information on new OK Champion Power Sewer Cleaners.

Name ..... Title.....

Address .....



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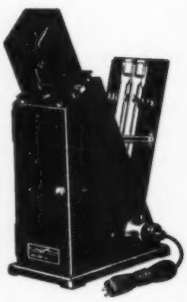
Only HELLIGE Offers These Exclusive Features...



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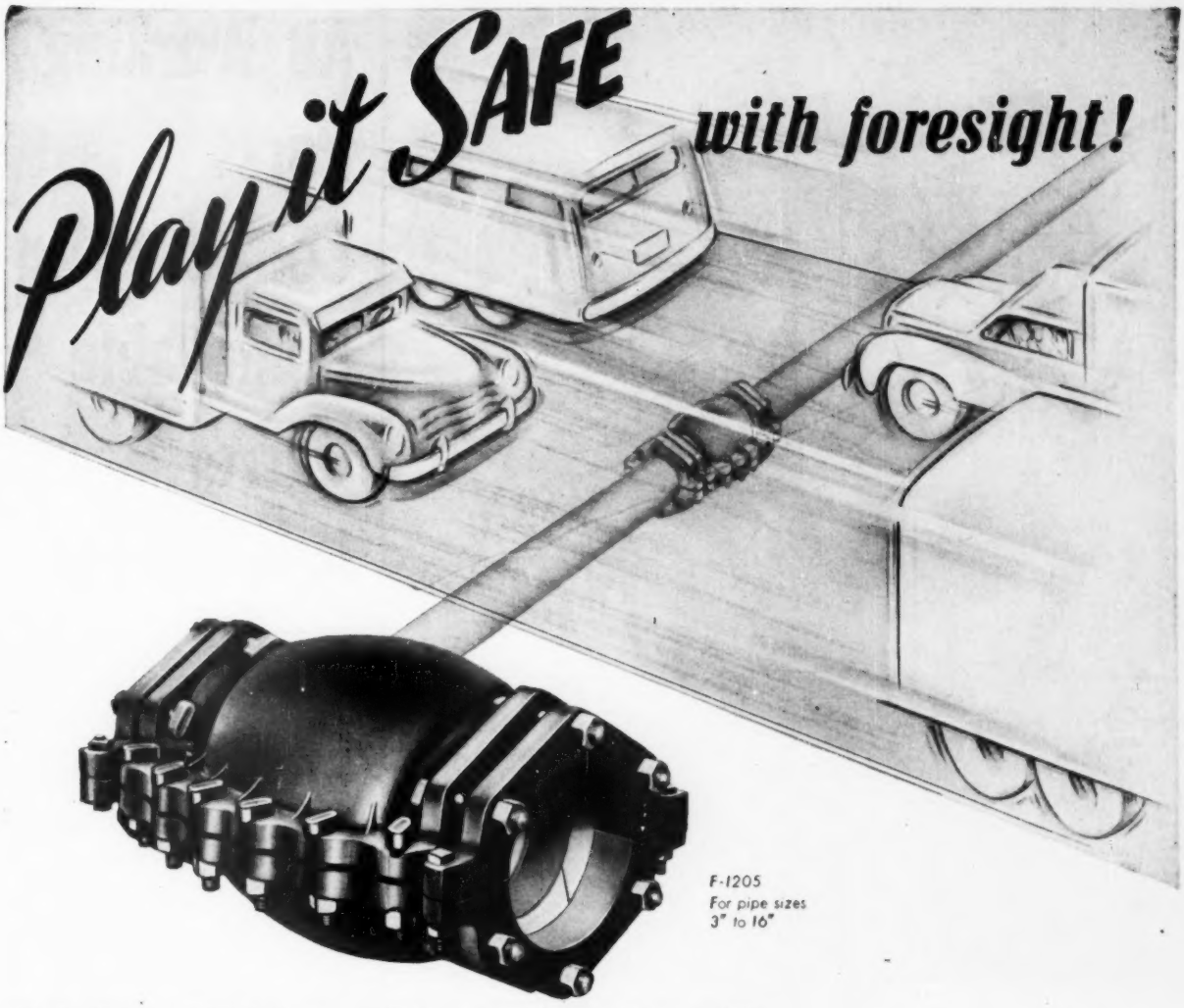
Play it SAFE with foresight!



F-1205
For pipe sizes
3" to 16"

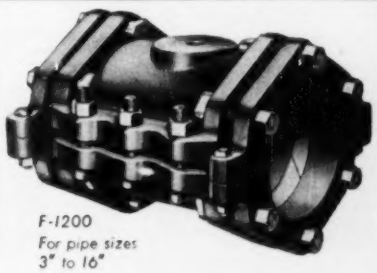
Reinforce all joints subject to vibration with

CLOW

Mechanical Joint BELL SPLIT SLEEVES

When ponderous trucks roar and rumble by, even our finest highways tremble with vibration . . . and so does the water pipe buried below! That's why it's best to play it safe: don't wait for a break; have the foresight to install Clow Mechanical Joint Bell Split Sleeves as *original equipment* wherever the pipe must pass under highway truck routes or under railroad tracks. Specify them for marshland or under water, too—in fact, everywhere that pipe is not readily accessible in case of emergency. They're easy to install . . . no lead, no jute, no caulking!

Write for circular with helpful information and illustrations



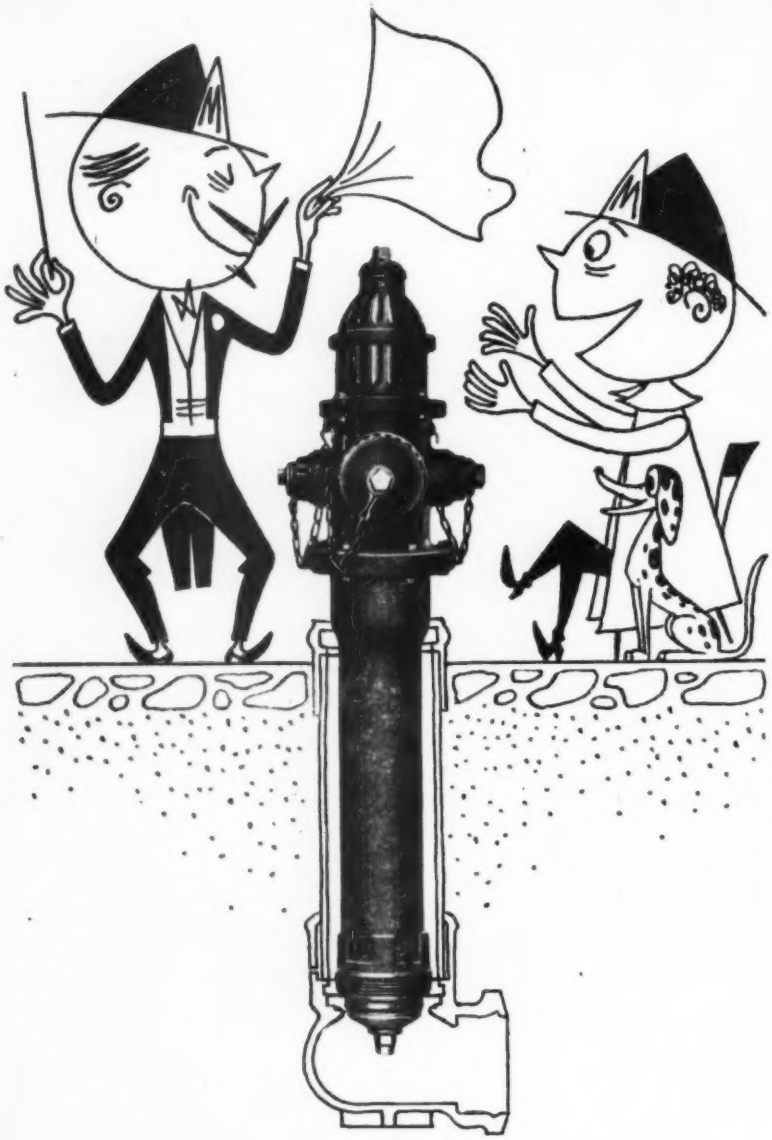
F-1200
For pipe sizes
3" to 16"

Use these F-1200 Clow Mechanical Joint Straight Split Sleeves for permanent repairs to pipe barrels. 12" and smaller sizes will repair lengthwise breaks up to 8 inches; 14" and 16" sizes, up to 17 inches.

JAMES B. CLOW & SONS

201-299 North Talman Avenue • Chicago 80, Illinois

and their National Cast Iron Pipe Division, Birmingham, Alabama; subsidiaries Eddy Valve Company, Waterford, N.Y.; Iowa Valve Company, Oskaloosa, Iowa



All Working Parts Contained in Removable Barrel... New Barrel Installed in Jiffy

● The barrel, containing all the working parts of the hydrant, is readily removed for inspection or for repair by simply unscrewing from the elbow and withdrawing from the protection case. *No excavating.*

● This exclusive Mathews feature eliminates any need for repair work on the job. A spare barrel can be inserted in a few minutes and the broken barrel repaired in the shop.

● With automobile accidents breaking an increasing number of hydrants, this speed of replacement is of tremendous importance in maintaining community fire protection.

No Other Hydrant Offers So Many Essential Features:

Compression type valve prevents flooding • Head turns 360° • Replaceable head • Nozzle sections easily changed • Nozzle sections easily raised or lowered without excavating • Protection case of "Sand-Spun" cast iron for strength, toughness, elasticity • Operating thread only part to be lubricated • All working parts contained in removable barrel • A modern barrel makes an old Mathews good as new • Available with mechanical-joint pipe connections

MATHEWS

HYDRANTS

Made by R. D. Wood Company

Public Ledger Building, Independence Square, Philadelphia 5, Pa.

Manufacturers of "Sand-Spun" Pipe (centrifugally cast in sand molds) and R. D. Wood Gate Valves

150th anniversary

Progress in Motor Grader Design

Allis-Chalmers new AD-40 shows importance of visibility. Operator can see front wheels — both ends of blade while he works.

A MOTOR grader operator has to be able to *see* his work to do a good job, whether he's rolling big windrows or doing highly accurate finishing.

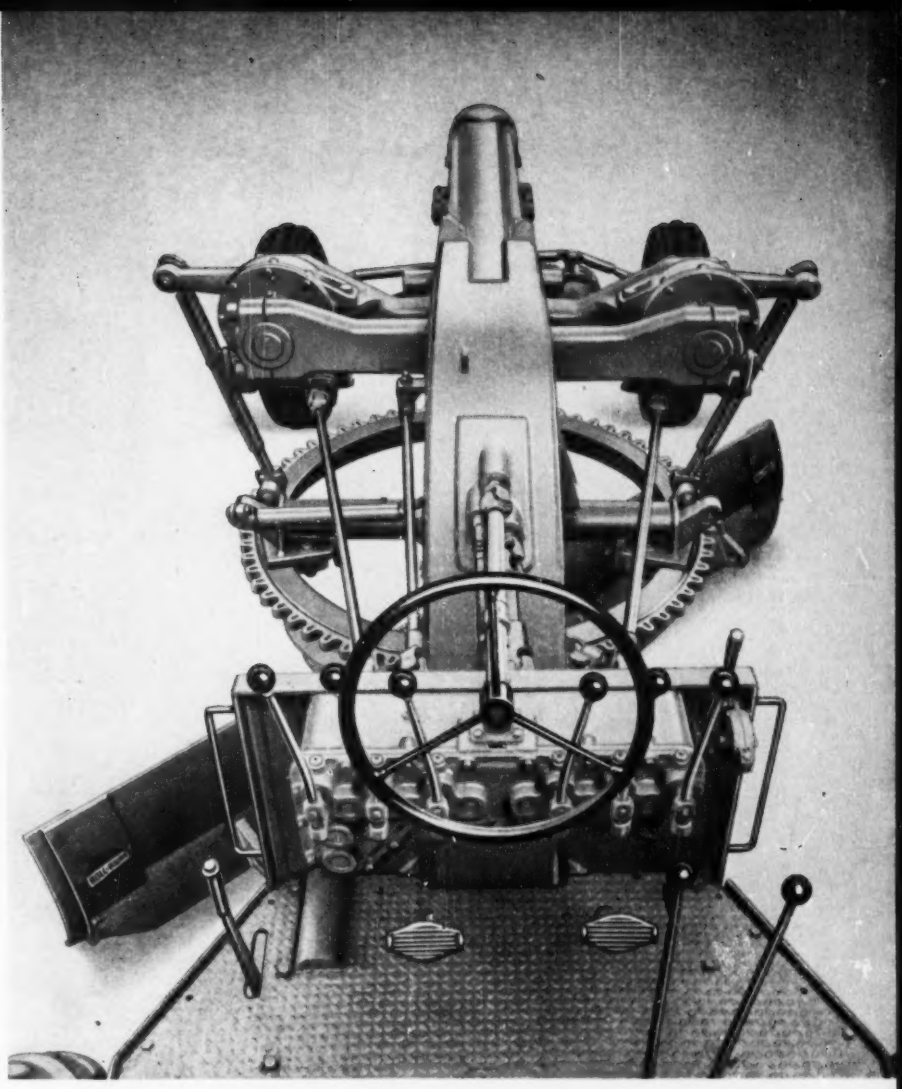
Here is how Allis-Chalmers engineers made sure the new AD-40 met these requirements. They carried A-C's single member frame all the way from the front axle to the platform; cut down the size of the lift cases to eliminate blind spots; lowered the control box and eliminated assemblies from the front panel to provide better visibility of the work area directly in front of the operator; tapered the front edges of the platform so that he could see both ends of the moldboard as he works.

A-C fieldmen also knew that a grader operator likes to sit down whenever the job permits. So they've not only given him ample leg room for stand-up operation but also a steering wheel of adjustable height and a seat that rolls forward at a touch for sit-down operation.

Combined with a new kind of power steering, these advanced design features are making Allis-Chalmers AD-40 an increasing favorite with operators and owners alike because it means more work done with less effort. For more facts on the AD-40, it will pay you to see your nearby Allis-Chalmers dealer soon.

ALLIS-CHALMERS
TRACTOR DIVISION · MILWAUKEE 1, U. S. A.

A-C



(above) Here is actual view operator has from platform of Allis-Chalmers AD-40, showing how well he can see both ends of the blade and both front wheels.

(below) The AD-40 has 104 brake horsepower, 23,000 pounds of weight and tandem drive traction, all it needs to do a better job on heavy duty construction . . . a faster job on maintenance.

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There's No "Gate Crashing" where Chapman *Standard* Sluice Gates are *on duty!*

Unnecessary expense, uncalled-for trouble, and undue maintenance cost . . . all are barred out for keeps by these rugged guardians of public funds.

To begin with, the Chapman Standard Line is so complete that it includes many designs and sizes usually considered special . . . so you may be able to save a special-order premium.

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Yes, you can order Chapman Sluice Gates up to 120″ . . . for any type of installation, and with any type of operating control . . . manual, hydraulic, or electric. Write for your copy of Catalog No. 25.

The Chapman Valve Mfg. Co., Indian Orchard, Mass.

for true economy in street light control

THE FISHER-PIERCE PHOTOELECTRIC CONTROL

- **LOW INITIAL COST**
- **LOW INSTALLATION COST**
- **LOW MAINTENANCE COST**

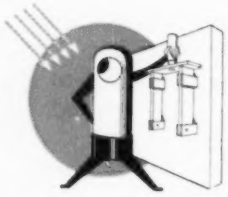
The *cost* of control of street lighting includes more than just the price of the control itself. Cost of installation is another major factor. Maintenance costs, if too great, can overcome all other economies.

The F-P Series 63300B Control combines *all three* elements of economy. No control of similar specifications has as low a purchase price. None requires fewer man hours for installation. No other control has equalled the F-P record for maintenance economy.

Fisher-Pierce is able to provide this economy in street lighting control because of its years of experience and its extensive engineering organization. Fisher-Pierce Controls have been proven by the experience of over 700 utilities now using more than 35,000 Fisher-Pierce units.

If you are considering adding to or modernizing your street lighting, be sure to investigate the possibilities of Fisher-Pierce photoelectric controls.

Write for Bulletin 63300B.



The FISHER-PIERCE CO., Inc.
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Circul-Air Dryers have passed the Approvals Tests and are listed by the Underwriter's Laboratories, Inc., Chicago and the Canadian Standards Association.

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Keep your streets and parks immaculate this EASY way with a

Good Roads MACHINERY

MOTORIZED SCAVENGER

Litter-free streets and parks — what a happy event for any City! And so easy to achieve!

Let the man in the picture tell you how it's done:

"I sit in a comfortable upholstered chair with adjustable foot-rest. I have my controls within easy reach. A 6-cylinder engine pulls up the refuse through that big 12" tube.

"Then the air flows through filters into airways and is discharged through the exhaust by a big blower rotator. The hopper is plenty big — 14-cubic-yard capacity. When it is full, next comes the trip to the dump. There I open the rear doors wide and the whole load is quickly emptied by a self-dumping mechanism.

"The best point of all about this SCAVENGER is its ability to pull up ALL TYPES of refuse — leaves and twigs, cans and bottles, paper and cartons, almost regardless of size, wet or dry."

For further information about this remarkable machine, consult your local dealer or write to the address below.

GOOD ROADS MACHINERY CORP., MINERVA, OHIO

Actual size: 2¼" x 3½"
City of Milwaukee specifications

Get Better Legibility and Lifetime Service with

CURTIS PORCELAIN HOUSE NUMBERS!

Whether for house, commercial or industrial installation, CURTIS Porcelain House Numbers meet every test.

Professionally designed and engineered, they provide these features:

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Sturdy, rust-proof aluminum frames available in lengths of 2¼" multiples. Accommodate 1 to 6 numbers. Easy to install.

Write today for samples and quotation on your requirements.

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NEW TYPE EASTERN "A" STANDARD

The most effective warning sign for work areas. Wide base red angle-iron frame won't blow over. Yellow free-swinging sign, black lettering on both sides. Choice of eight standard legends, also reflectorized.

Portable unit stands 27-in. high by 18½-in. wide; folds and locks 18-in. x 18-in. sign in place; flags removable; weighs only 13 lbs.

All Eastern Metal traffic signs are official designs as specified by the Department of Commerce, Bureau of Roads—new legible lettering, heavy-gauge steel and durable flexible baked enamel. Prompt delivery and economical price.

Send for illustrated folder and price list.

INDUSTRIAL • SAFETY **EM** SIGNS UTILITY • TRAFFIC

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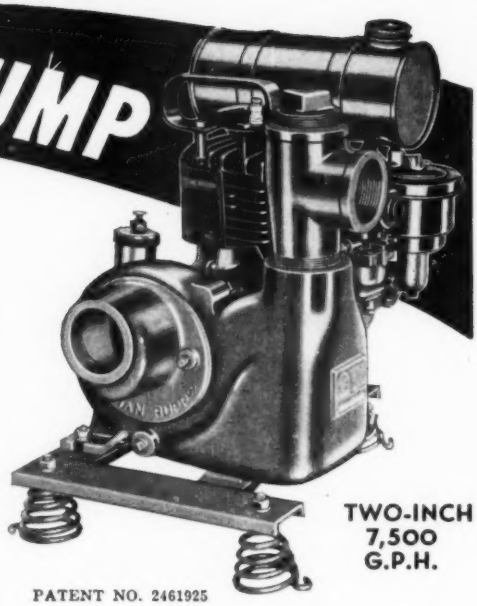
The "PELICAN" PUMP



THE WONDER PUMP OF THE *Lightweight Field*

AND THE LOWEST PRICED TWO-INCH PUMP OF ITS CAPACITY ON THE MARKET!

The "Pelican" self-priming centrifugal pump challenges any pump its size and type to equal it in performance.

Quickest priming, Fastest pumping, Most dependable

Suction Lift - up to 25 feet, sea level.

Automatic Self-priming - no ports, no valves.

Portability - weighs only 70 pounds, provided with carrying handle for easy portability.

Non-clogging - any muck or solids that will pass the intake strainer will pass through the pump.

Simplicity - the impeller, the only moving part, is mounted directly on the engine shaft and operates at engine speed.

The "Pelican" is a reliable, trouble-free, general utility pump small enough for easy handling and large enough for a wide range of applications in municipal utility field.

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PATENT NO. 2461925

FOUR GORMAN-RUPP LIGHTWEIGHTS

The Midget, 1½" - wgt. 62 lbs., 5500 g.p.h. Primes in 75 sec. at 25 ft. suction lift.

The Pelican, 2" - wgt. 70 lbs., 7500 g.p.h. Primes in 75 sec. at 25 ft. suction lift.

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THE GORMAN-RUPP COMPANY
MANSFIELD, OHIO

Signs YOU CAN'T MISS!!

Give the kids in your community a break . . . by providing traffic control signs that actually "scream out" at motorists telling them what to do and where. You simply can't go wrong with Miro-Flex Signs, *America's finest complete sign line,* because their distinctive markings really stand out and are easy to read. More than that, they are a wise investment for the citizens, too. All Miro-Flex Signs are embossed on zinc-coated, Bonderized steel and finished with the best baked-on enamel which assures you that they will be around for years to come. They can be furnished plain or reflectorized. *Write for prices and your copy of Miro-Flex's catalog today.*

THE MIRO-FLEX CO., INC.
1824 EAST SECOND STREET WICHITA, KANSAS

HERE'S HOW LOAD-PACKER REFUSE COLLECTION CUTS COSTS MORE THAN 50% in a TYPICAL COMMUNITY

In many towns with 3,000 to 6,000 population, one Gar Wood LOAD-PACKER has replaced from three to five open-type trucks formerly used for municipal refuse collection. And, in larger towns and cities, equipment savings increase in even higher proportion.

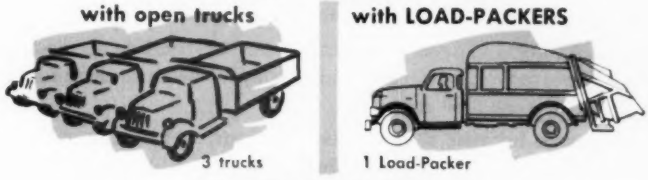
For example, consider a typical American city of 6,000 people which would average about 1,600 dwellings. A single LOAD-PACKER with a crew of two loaders and a driver can service 800 dwellings each 8-hour day. Thus it's easy to maintain a schedule of one weekly residential garbage collection, one weekly trash and ash collection and daily garbage and trash collections at commercial establishments. One day each week, too, can be reserved for general or special clean-up jobs.

Under this easily maintained schedule, one LOAD-PACKER offers better service to residents than was previously possible with a minimum of three open trucks. And extra savings are assured since there is only one truck to maintain. Labor requirements are reduced and extra manpower is made available for street maintenance, sewer cleaning or other municipal assignments.

From small towns to the largest cities—in test after test—Gar Wood LOAD-PACKERS have consistently resulted in faster refuse collection schedules with lower operating costs. *Now, put modern refuse collection to work in your community.* Mail the coupon below for valuable free information about modernizing your refuse collection system—and cutting your collection costs—with new, modern Gar Wood LOAD-PACKERS.

Gar Wood LOAD-PACKERS SAVE EXTRA DOLLARS

EQUIPMENT PURCHASE COST



UP TO 50% LESS

LABOR COST

FROM 50% TO 66% LESS

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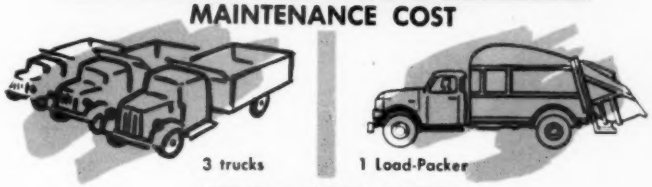

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GAR WOOD INDUSTRIES, INC.
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Customer Service Department
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Please send me full information about the new Gar Wood LOAD-PACKERS.

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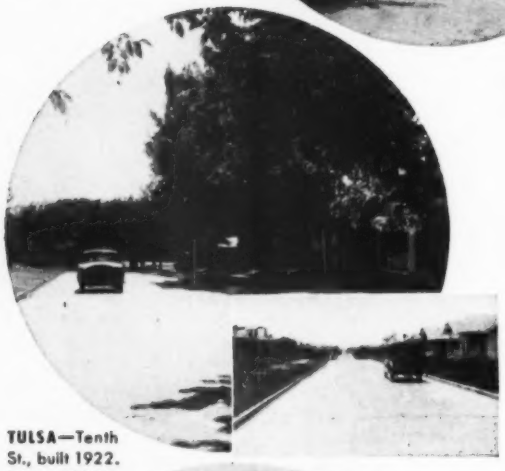
TRUCK EQUIPMENT: Dump Truck Bodies and Hoists, Winches and Cranes, Refuse Collection Units, Elevating End-Gates.
CONSTRUCTION EQUIPMENT: Excavators, Scrapers, Dozers, Ditchers, Spreaders, Fine-graders, Truck-Mounted Road Graders.

OKLAHOMA CITY—W. Hill St. near Shartel St., built in 1923. Photos taken in 1925 and 1951.

SAPULPA—S. Hickory St. at Bryan, built in 1923. Photos: 1925 and 1951.



TULSA—Tenth St., built 1922. Photos: '23, '51.

Here today—*and still here tomorrow*

that's the story of Oklahoma's Concrete Streets

Many concrete streets like these in the Sooner state have given ***low-annual-cost*** service for more than 25 years—and will continue to serve for years to come. Such economy and durability have led to an overwhelming preference for concrete streets. During a recent three-year period 86 per cent of all street paving awarded in the state was for concrete.

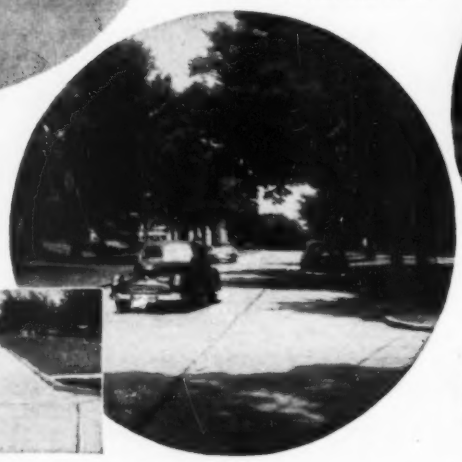
Concrete streets all over America render outstanding service and are preferred by motorists and taxpayers because of their safety and ***low annual cost.***

They're safe because they're skid resistant, wet or dry, and because their light color provides maximum visibility at night. They're low in annual cost because that's the natural result of moderate first cost + low maintenance cost ÷ long life.

PORTLAND CEMENT ASSOCIATION
33 West Grand Avenue, Chicago 10, Illinois
A national organization to improve and extend the uses of portland cement and concrete through scientific research and engineering field work

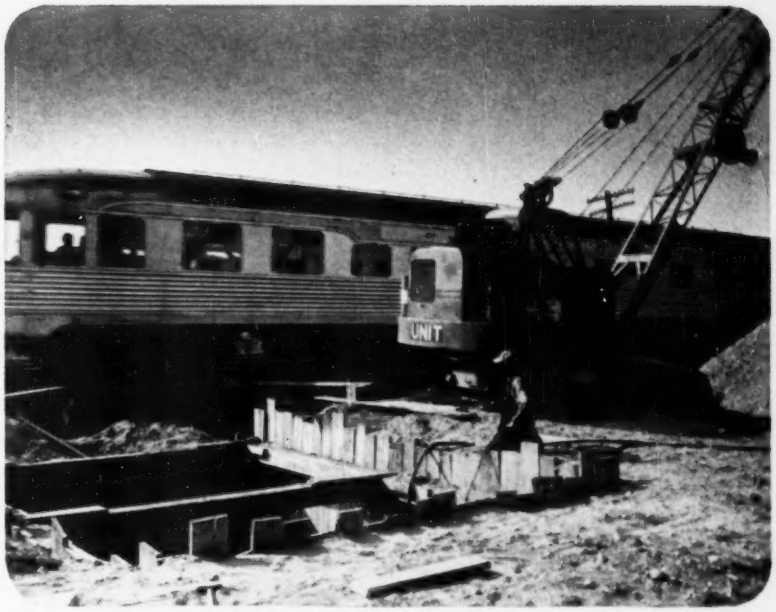
BARTLESVILLE—Delaware Street at 10th Street, was built in 1919. Photos were taken in 1921 and 1951.

BARTLESVILLE—12th Street, east of Delaware Street, built in 1920. Photos taken in 1921 and 1951.

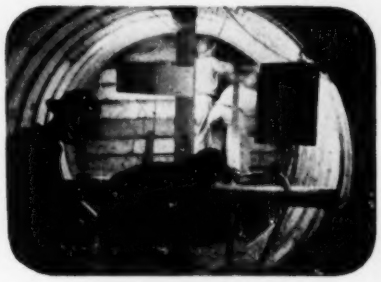


NORMAN—Oval Drive at State "U," built 1922. Photos taken 1923, 1951.

THIS SEWER DIDN'T STOP AT



Looking into shaft, showing start of Armco Tunnel.



Building tunnel. Jack projects poling plates.

How would *you* put a new municipal sewer line under a main-line railroad? This midwestern job is typical of how many cities do the work—without slowing down trains or sewer installation.

First, they dug a shaft near the tracks. Then they tunneled under the railroad with Armco Liner Plates. It was easy to add successive rings because one workman could carry, hold and bolt an Armco liner section into place using only standard tools. Job costs were low. Equally important the corrugated Armco Liner Plates assured a strong, safe structure.

Next step was to thread the Armco Corrugated Metal sewer through the nine foot diameter Tunnel Liner conduit with a block-and-tackle. The project was completed quickly, easily and economically.

For *your* next underground job, consider Armco Liner Plates. They are the convenient, economical answer for underpasses, sewer and utility line conduits, tunnels and similar structures. Write for details. Armco Drainage & Metal Products, Inc., 1233 Curtis Street, Middletown, Ohio. Subsidiary of Armco Steel Corporation. Export: The Armco International Corporation.

ARMCO LINER PLATES

ARMCO

CRAFTSMANSHIP IN WATERWORKS BRASS

. . . results in uniform top quality. McDONALD Waterworks Brass is precision made from 85-5-5-5 metals with every step from foundry to final inspection and testing under rigid control. Shown above is E-4713-Stop, E-4753, E-4754 and E-4756- Copper Service Pipe Couplings.

An illustrated brochure with detailed specifications showing our complete line of Waterworks Brass will be sent to you promptly on request. A. Y. McDONALD MFG. CO., Dubuque, Iowa.

BRASS GOODS • PUMPS • OIL EQUIPMENT

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1856
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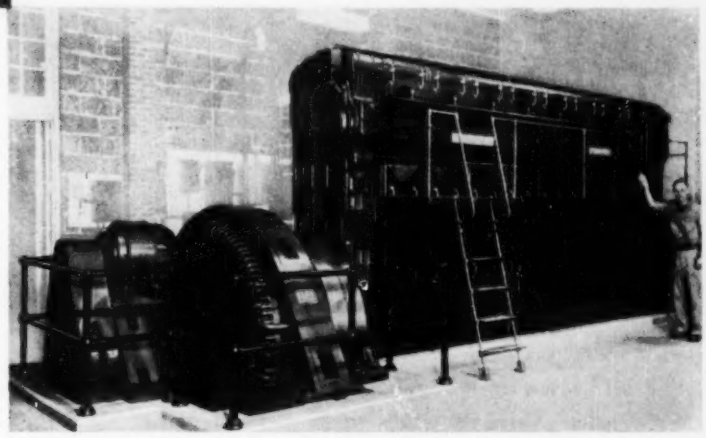
Superior DIESEL

"accomplished better results than the manufacturer ever promised"—L. W. MARPLE,

Superintendent of Woodsfield, Ohio, Power Plant

The Superior Diesel was installed at Woodsfield in 1950 so Mr. Marple's complete statement regarding the community's experience is further evidence of his satisfaction with the engine's performance—

"This SUPERIOR engine is doing a wonderful job since installation and has cost us nothing for maintenance. It has accomplished better results than National Supply ever promised and I would highly recommend this type of Diesel to any prospective buyer."



Model "80" Superior Dual-Fuel Diesel driving 600 KW generator.

There was basis for comparison, too, in view of the fact that Woodsfield has operated its own power plant since 1920 and installed its first full diesel engine in 1935. Two semi-diesels were replaced with diesels in 1946 and 1947 and these three units develop a total of 635 KW.

With the installation of the Superior Diesel the entire daytime load is carried by this engine while two of the former units carry the demand after 11 p.m. This has proved to be economical for Woodsfield because the dual-fuel Superior, operating on natural gas with 10% liquid fuel for pilot, *reduces the overall fuel cost by 50%* when compared with full diesel fuel operation of the original engines.

Throughout the U.S.A., and in most other parts of the world, you'll find similarly outstanding performance records being established by Superior and Atlas Diesels. Ask your Engine Division representative or write Springfield for descriptive bulletins and case histories which demonstrate the efficiency and dependability of Atlas and Superior Diesels.

Superior ENGINES ATLAS Imperial DIESEL ENGINES

DIESEL • DUAL FUEL • GAS

ENGINE DIVISION

THE NATIONAL SUPPLY COMPANY

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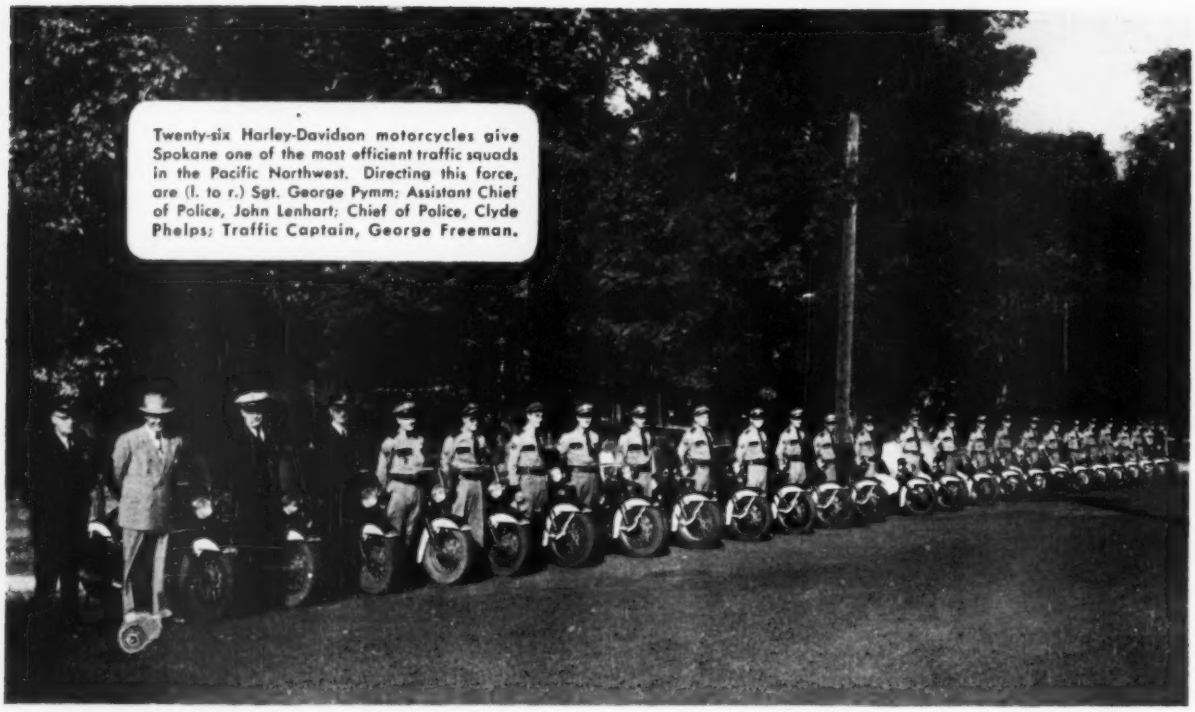


Twenty-six Harley-Davidson motorcycles give Spokane one of the most efficient traffic squads in the Pacific Northwest. Directing this force, are (l. to r.) Sgt. George Pymm; Assistant Chief of Police, John Lenhart; Chief of Police, Clyde Phelps; Traffic Captain, George Freeman.

SPOKANE SPEAKS OUT
...for greater traffic safety

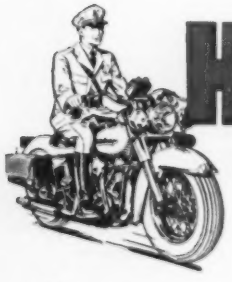
THIS sprawling, rapidly growing giant, in the Pacific Northwest, has skyrocketed from a population of 20,000 in the 1890's to more than 160,000 today. Naturally, as Spokane grows, its traffic problems become increasingly difficult . . . and increasingly important.

It's up to the Spokane Traffic Squad to maintain tight traffic control and effective law enforcement in the face of this mushrooming responsibility. That's why they depend on easy-to-handle Harley-Davidson police motorcycles exclusively. Right now, the Spokane Traffic Squad has 26 Harley-Davidsons in service; 18 solo Hydra-Glides and 8 Servi-Cars. For winter use, each solo has a sidecar.

Your city, large or small, can find the best answer to growing traffic problems, too. Insist on Harley-Davidson police motorcycles. Rugged and dependable, they're built to give you miles and miles of economical, efficient service.

Fast acceleration, effortless steering and oil-cushioned comfort are among the many features that make Harley-Davidson the first choice of traffic directors, police chiefs and patrolmen all over the nation. Ask your dealer for complete information. For valuable booklet, "More Effective Police Power," write

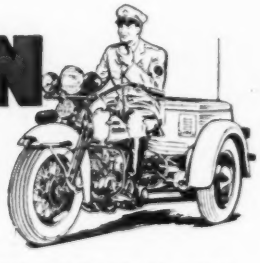
HARLEY-DAVIDSON MOTOR CO., MILWAUKEE 1, WISCONSIN



HARLEY-DAVIDSON

Motorcycles **POLICE** Servi-Cars

BETTER TRAFFIC CONTROL



Here's new high-speed performance and operating ease to reduce your accounting costs—

IT DOES THESE JOBS —AND MORE!

Budgetary Accounting
Payroll • General Ledger
Tax Billing • Public Utility
Billing & General Accounting
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Burroughs Sensimatic
ACCOUNTING MACHINES

Here at last is an accounting machine so swift, so efficient, so simple to operate, that it brings bigger savings to every job—does *all* jobs with unerring accuracy!

The Sensimatic's amazing effort-free speed comes from its exclusive sensing panel or "mechanical brain" that automatically directs it through every accounting operation. Its superior design makes the operator's work easy. There is less to do—less to learn. Automatic controls, continuous visibility of work in progress, and complete keyboard control, reduce operations and chance of error—provide peak production on *every* accounting job.

Get the facts today about Sensimatic's astonishing record of low-cost, high-speed operation! Call the Burroughs office nearest you. It's listed in the yellow pages of your telephone book. Burroughs Adding Machine Company, Detroit 32, Michigan.

Sensimatic 300 with 11 totals
Sensimatic 200 with 5 totals
Sensimatic 100 with 2 totals

CHANGE JOBS INSTANTLY . . . at a turn of the job selector knob. Any four different accounting operations controlled by one sensing panel. Any number of panels can be used, so there's no limit to the number of jobs a Sensimatic will do.

WHEREVER THERE'S BUSINESS THERE'S Burroughs

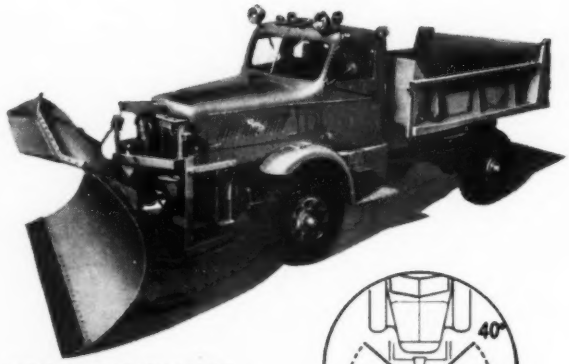
Airports eliminate high snow banks with FWD Model AU

Provide safe ground conditions all winter long the fast, efficient FWD way

KEEPING runways, ramps, and turn-around areas clear, and eliminating treacherous drifting snowbanks, is a fast, easy and inexpensive job with the FWD Model AU Snow Remover.

Plowing at speeds to 35 m.p.h., the AU casts snow with a rotary-like action . . . *and casts it 50 to 75 feet!* With 188 b.h.p., four wheel drive, and proper distribution of weight and power — the AU keeps working in any kind of weather, gets the job done where other more expensive rigs fail.

Designed with the aid of airport snow removal experts, the AU has been proved in the field, offers benefits not possible with any other unit. And in spring, summer or fall . . . it's ready to take over on grading and maintenance or general hauling work. THE FOUR WHEEL DRIVE AUTO COMPANY, Clintonville, Wis., Kitchener, Ontario.



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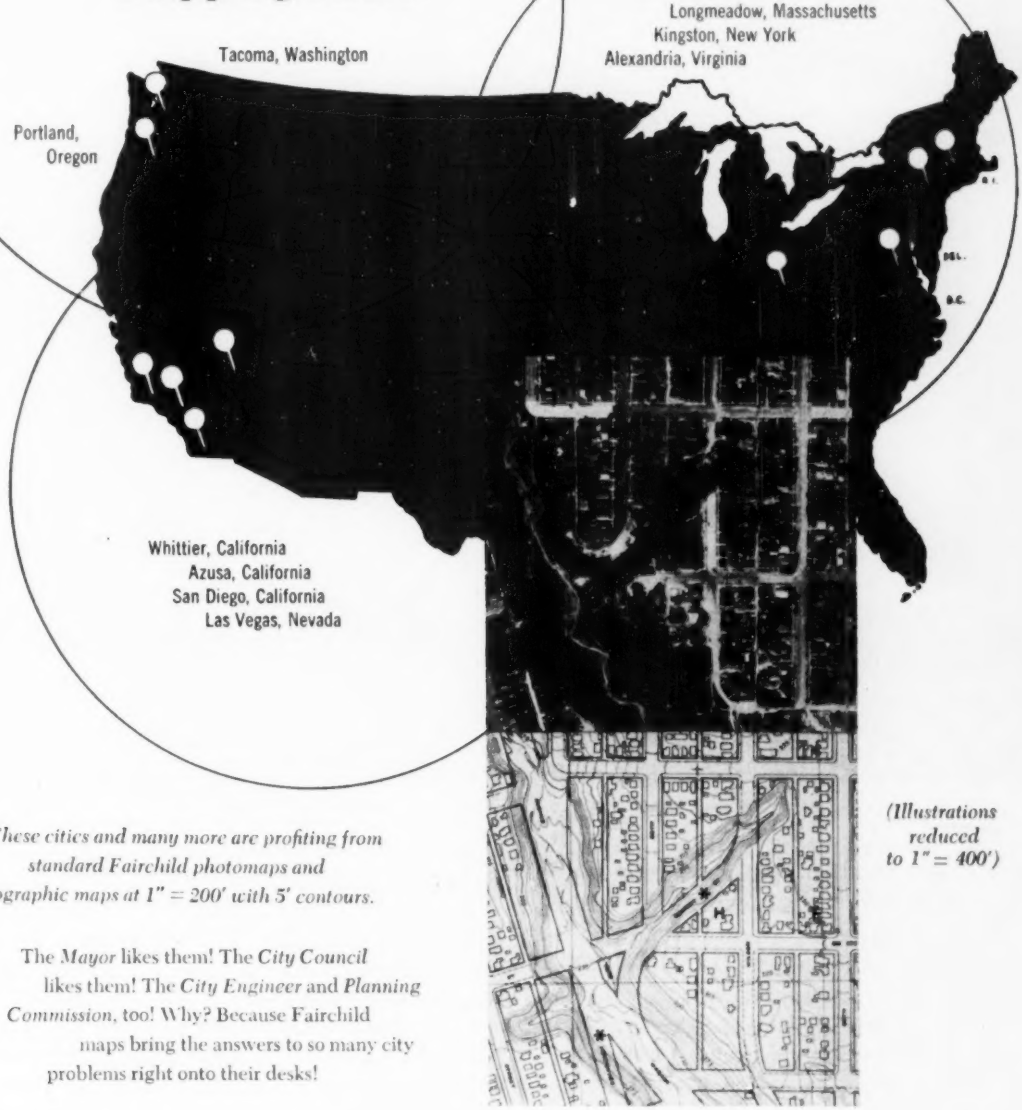

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The City Or the Suburbs *Or Both?*

Greater Boston Area Council may set pattern for urban centers

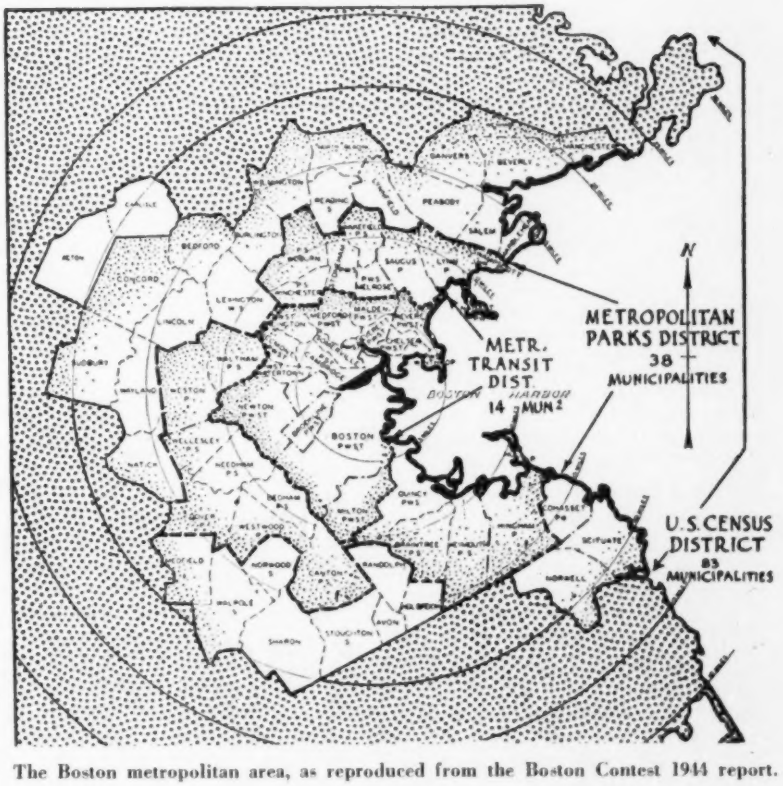
By WILLIAM ROGER GREELEY
Chairman, Greater Boston Area Council
Boston, Mass.

FOR ANY ATTEMPT at planning the organization and functioning of an ever-growing metropolitan community, the experience of London during the last 80 years has been illuminating. The group of municipalities constituting the metropolitan community has handled the affairs of that community through a London County Council clothed with appropriate authority. Meanwhile, each individual city has preserved its identity and managed its own political business. The result has been an outstanding contribution to the science of governing a great urban population.

This experience is corroborative of the generally accepted theory in regard to democracy — the theory that self-government depends for stability and responsibility upon the personal participation of citizens with common objectives and with mutual respect. These citizens must be close enough to each other in their daily lives to develop some sentiment of belonging to a neighborhood with tangible, commendable common purposes.

The new County Council, assuming at first the duties of the Metropolitan Board of Works, grew to include public health, hospitals, and schools.

This great achievement by the world's largest city three generations ago followed the pattern developed by the framers of our federal government a century before that. We had set up a federation of sovereign states at the national level. They, in London, adapted it to sovereign towns and cities at the municipal level. Parliament apparently recognized that democratic government must always remain close to the people, and, therefore, be vested in small units; that suburbs should not be wiped out in a process of amalgamation to form a great city, but should be bound together in a federation—in



The Boston metropolitan area, as reproduced from the Boston Contest 1944 report.

this way providing for the orderly handling of common or joint affairs, while preserving inviolate the political integrity of each individual suburb.

The structure of society in such a community is, therefore, composed of agencies of government at three levels: (1) the county or metropolitan unit, dealing with matters involving general welfare, common to all people; (2) the city, town, or borough unit, handling matters involving the citizens of the particular town only, and (3) the family unit, handling matters affecting this smallest of institutions only.

Under this setup, the metropolitan administration does not and cannot interfere with local municipal activities, and the municipal administration does not and cannot meddle with family affairs. It is to be noted, however, that the citizen himself constructs not only the family, but also the town, and that he equally creates and controls the agency that administers for him and his fellow citizens the affairs of the larger community—the metropolis or megapol.

This pioneer experience of London has stood the test of almost a century—and, be it noted well, a century in which civic affairs have evolved and revolved and exploded and suffered catastrophic shock. Yet the federated community has weathered it all successfully.

The history of London is slowly finding an echo in some American cities, notably in Boston. In fact, the London Metropolitan Board of Public Works of 1855 was the prototype of Boston's Metropolitan Sewer Board of 1889, the Metropolitan Park Department of 1893, the Metropolitan Water Board of 1895, and finally of the combination of these three in the Metropolitan District Commission of 1919. While Londoners objected to outside control, and after a few years were given the power to set up their own Metropolitan Board, Bostonians have until now accepted state domination of their district commission without effective organized objection.

Awareness of Need

Yet since 1919 there has existed in the community a flickering awareness of this urgent need. The years 1927 to 1931 witnessed conspicuous efforts by the late Joseph B. Beale of the Harvard Law School and other forward-looking citizens to bring about the creation of a responsible borough system of regional government.

In 1944, the Boston Society of Architects, with Boston University, Harvard, Tech, the Boston Chamber of Commerce, the Mayor, and the Governor as co-sponsors ran a contest to bring out the best current thought bearing upon the future of the Greater Boston area, its planning, its government, its taxation system, and its attitude towards industry and education. This was called the Boston Contest and its published conclusions were printed and widely discussed.* There was an almost unanimous demand for an agency of government at the Metropolitan level. The officers of the contest asked the Governor to call the first meeting of a council to be composed of two representatives from each of 43 municipalities. On June 1, 1945, this first council met at the State House. Meanwhile another center of interest was formed among civic, industrial, and commercial leaders, to advance the interests of the community by securing cooperation in the fields of business and finance. This was the "Greater Boston Development Commission." It subscribed funds, employed a planning and engineering staff, introduced and secured the passage of a bill to rehabilitate the Port of Boston, and published a book, "Surging Cities," dealing brilliantly with metropolitan problems.

IT IS DIFFICULT AT FIRST to realize that the cities and towns of a modern metropolis are as unpracticed in cooperation as if they were a thousand miles apart and that their citizens are as completely strangers to each other as if they were citizens of warring nations. The ability to trust each other and work together must be developed from scratch and is a major objective included in the Council's program.

W. R. G.

At this point the New Boston Committee, a group of energetic young men, unwilling to continue to accept political conditions as they found them in Boston, banded together and with the zeal of crusaders drew up a slate of city candidates, rolled up their sleeves and worked so tenaciously and forcefully that their slate was elected almost to a man!

The morale of the whole community was galvanized and strengthened.

Following the election some of the same men, with others recruited to the cause, formed the Greater Boston Area Council for the purpose of carrying into metropolitan affairs some of the intelligent constructive effort that the situation demanded.

Objectives of the Council

Today this group has organized, elected officers, set up committees, and set its course. As it is setting a pattern for other urban centers, let us examine its present position and its future objectives.

The position of this Council is central in the larger community which it represents, and it occupies this place alone, with no competitor. No other body or group exists composed of delegates from the citizenry of the 43 municipalities involved. No other group has dedicated itself to solve the problem implied in the question, *"The city or the suburbs, which?"*

The objectives of this body are determined by conditions existing, not alone in Boston, but in every one of the country's metropolitan communities. These objectives will have to be formulated and understood in every such community as conditions reach a chaos that becomes unendurable or a corruption that is even harder to live with.

The first objective is the careful and impartial assessment of the conditions existing in the community at the political, industrial, and cultural levels. Facts and values are being marshaled in a survey that will be based upon research by many different committees. Some of these committees are already at work, each in a special area. The total survey will be built up through a synthesis of the various committee findings. Such a survey is an ambitious undertaking. The great features of Chicago's replanning were based upon such a survey, born of the genius of Daniel H. Burnham a half century ago. New York and Philadelphia followed suit. There is no other way to begin a great movement toward better government than to appraise the condition actually existing in the community to be served.

The Plan, Program Preparation, and Political Action

The second objective in such a program is the development of a plan embodying the changes, the innovations, and the continuing policies that shall be determined upon as requisite and reasonable for the development of the community in the future. Again there is precedent for this step. Many cities have undertaken such planning with varying degrees of comprehensiveness but usually with beneficial effects.

The third objective is the preparation of material and the adoption of techniques to convince citizens of the advantages of the plan using all available techniques for the presentation of carefully selected material. In this educational campaign Chicago stands out as the classic example, and *Wacker's Manual* is the best known of all publications designed to enlist support of a plan on the part of the total population, even the school children. Included in this third stage is the gradual welding together into a working unit of the existing detached fragments of the various populations.

The fourth stage is the first of the political action stages. It contemplates the general adoption of a well-organized program of planning and procedure upon which a significant majority of the citizens is willing to unite. Experience indicates clearly

* See THE AMERICAN CITY for January 1945, pp. 63 and 85.

that no comprehensive plan can be formulated in the beginning and that the activities of the group in the early stages will be confined to specific measures for improved elements in the immediate picture. Success in any single project will encourage the undertaking of another and then another, and so by small and perhaps stumbling experiences the new agency will gain its feet, much as a child learns to walk.

Elements Common to Government In Voluntary Cooperation

The specific projects cannot be listed in advance, as they will be forced into the foreground by varying local developments, economic crises, or even national emergencies. Among them, however, are certain familiar and oft-cited elements common to county governments or groups of municipalities in voluntary cooperation.

The major public services for handling water supply, drainage, and sewage disposal demand, for economical maintenance, cooperative planning and administration.

Waste disposal has become an acute problem incapable of comfortable handling by each municipality separately from the others. Costly installations are required, and they are suitable for the use of more than one community.

In the field of transportation, throughways, circumferential links, extensive parkways, bypasses, and the like require coordination in planning and integrated budgeting and supervision. Subways, surface lines, and terminals call at least for a regulating agency at the metropolitan level. A dozen bridges crossing a river from one city to another should be constructed and maintained by a joint authority.

Recreation for a metropolitan population is best handled by a board having jurisdiction over beaches, major parks and playgrounds, forest and mountain reservations, and such other amenities as are intended to serve the people of the larger community and not merely the individual town.

Cultural Assets, Public Safety

Cultural assets, among which may be mentioned the public library, the symphony hall, the opera house, the museums, and other community-supported undertakings of this kind, tax a single city too heavily. They are more easily carried on the shoulders of the total citizenship of the metropolis.

Public safety can be served better in an area where the individual fire departments, police departments, ambulance services, and life-saving units are correlated for close-knit cooperation. This works not only for increased safety but for lower costs.

Tax problems in their relation to social stability are more satisfactorily handled among cities and towns which work in harmony and set up assessing standards that have sufficient uniformity to inspire confidence and remove glaring disparities.

The members of the Greater Boston Area Council today are determined to relate these and all other specific projects to a future community in which the federal or over-all government rests securely upon self-contained and self-governing municipalities, bound together for a common purpose.

The time will eventually come, and this will be the fifth step, when the citizens are prepared to consider a comprehensive setting-in-order of metropolitan functions, and to establish, as in London, an agency of government at the metropolitan level, authorized to administer metropolitan affairs.

Underneath and permeating all this research, appraisal, programming and political action is the seldom-recognized prime objective of it all. It is a human objective, a human balance.

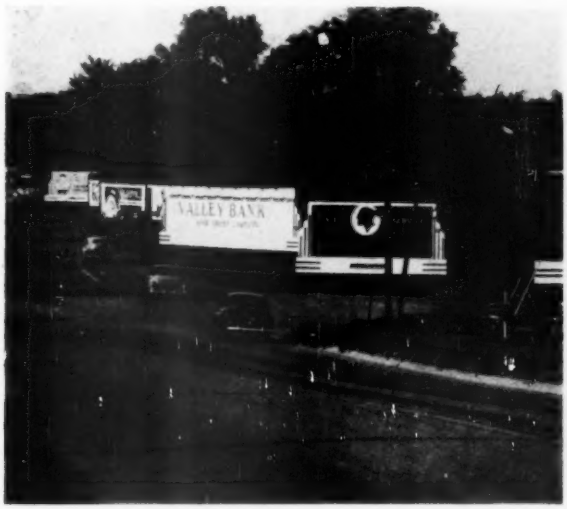
The city as it grows in population tears loose from human balances and proportions and becomes a Frankenstein monster, less and less under the control of its people. To increase the population by swallowing the suburbs is only to make confusion worse confounded. The opposite course is the one that holds out hope, namely, to follow London's example, keep the self-growing communities of a wieldy size and close to the individual citizen, and allow them to federate for the purposes of metropolitan order and economy.

The main problem must never be lost sight of. The object of the community is the production and maintenance of human character and human happiness.

Which Entrance Does Your City Want?

THE *Des Moines Tribune* has made effective use of photos such as those shown here in an excellent series of three articles urging public support for a proposed ordinance to curb billboards and provide for the eventual removal of those now standing.

The *Tribune* has pointed to the "harsh" reasons why most of the approaches to Des Moines (and many other cities) are now jungles of blatant eateries, junk yards, and advertising alleys. Public indifference or perhaps misunderstanding, and the organized and experienced opposition of the outdoor-advertising industry are blamed. Now, however, enabling legislation in Iowa (and a number of other states) is recognized by zoning bodies and by the courts as providing authority to regulate land uses along expressways and other roads.



A stretch of Fleur Drive in Des Moines.

A still-unspoiled stretch of Fleur Drive.

Fargo, N. D., uses upflow clarifiers in old settling basins and raises the plant capacity from 10 to 15 mgd

50% More Water From the Same Plant Area

By H. H. BEHLMER
Water Superintendent
Fargo, N. D.

TODAY, IN FARGO, we are able to get 50% more water through our softening and filter plant than we could before the present improvements were made—and without increasing the area of the plant. We have been able to do this by building our improvements around the faster-acting, compact upflow type of clarification equipment.

Originally, our plant, constructed in 1912, had a rated capacity of 6 mgd (million gallons daily). It has been enlarged twice, once in 1926, and a second time in 1934. The first enlargement consisted of extending the settling basins and clear wells to twice their original length, doubling their capacity. Provisions also were made at that time for the construction of four additional filter beds of 1 mgd each. In 1934, we built these beds, giving the plant its rated capacity of 10 mgd.

Since the early 1940's we have faced the obvious fact that the capacity of the plant would soon have to be increased. Often, during the dry-weather spells, when yard-sprinkling demand was heavy, we found times during the day when the output from the plant exceeded the treating capacity. This demand would draw down the reserve in the million-gallon clear well to a point that concerned us greatly, for we feared that should a serious fire develop there would be an insufficient supply of water to fight it.

This became so alarming that in 1945, the city retained services of Black & Veatch, consulting engineers, of Kansas City, Mo., to make a survey of the water-production facilities with the idea of increasing the capacity to 15 mgd without requiring any more land area. By this time, our plant had been surrounded by residences, and the price of more property would have been excessively expensive. The engineering study showed that three 4½-mgd Infilco Accelators could be installed in the west half of the No. 2 settling basin, and that the old concrete, wooden-baffled mixing chamber could be remodeled and divided into a pre- and post-chlorination contact basin. Thus the improvement could be made on the existing plant site.

These Accelators operate on an upflow basis. The water, with its floc, passes upward through a suspended blanket of sludge. This helps remove the floc and other suspended matter much more quickly than is possible with the conventional settling basins.

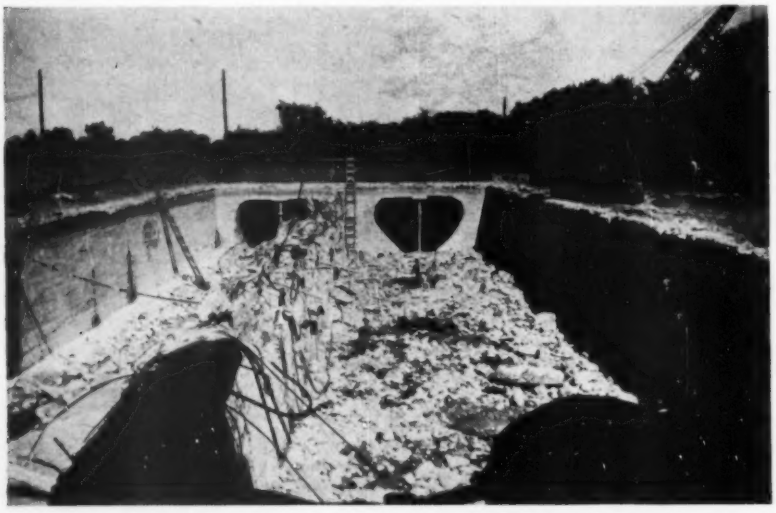
In the spring of 1950, we requested bids, and on their basis, awarded a contract for the construction work to the T. F. Powers Construction Company of Fargo, N. D. The Water Department purchased the Accelator equipment from Infilco, Inc., of Tucson, Ariz., and awarded a contract for its erection to the T. F. Powers Construction Company. The erection crew as well as the engineer in charge had had no previous experience whatever with the setting up of this equipment. Nevertheless, the work was done by carefully following the erection instructions which came with the Accelators. The most difficulty was encountered when welding the 3/16-inch plates in place. These had a tendency to warp and it was necessary to bring them back to a plane surface by heating and then shrinking with cold water.

The original plant, with the exception of the No. 2 settling basin, remained in full operation throughout the remodeling period. We had to restrict lawn sprinkling during the excessively dry months of May and June in 1951. This would have been necessary even though the plant had not been under the remodeling process, as the demand exceeded the capacity of the plant.

Good Clarification Results

After the Accelators were installed, inspected, and approved by the engineers, that portion of the plant went into immediate use. Due to the lack of storage capacity for the filtered water, we could not make a trial run of the equipment without closing down the plant. Therefore, we made the change-over without interrupting the flow of treated water to the filters. In a matter of only a few hours we had the satisfaction of seeing an effluent of less than 10 ppm turbidity on its way from the Accelators to the filters. We received no complaints about tastes or odors during or after the change-over.

We then drained the old mixing chamber and No. 1 settling basin and made the necessary construction changes to fit them for use under the new setup. The No. 1 settling basin and the east half of the No. 2 settling basin conduct the water from



Half of one of the settling basins being readied for the upflow clarifiers.

the Accelators to the filter gallery. They are connected by sluice gates and a bypass flume so that they can be taken out of service and drained without interrupting the flow of water through the balance of the plant.

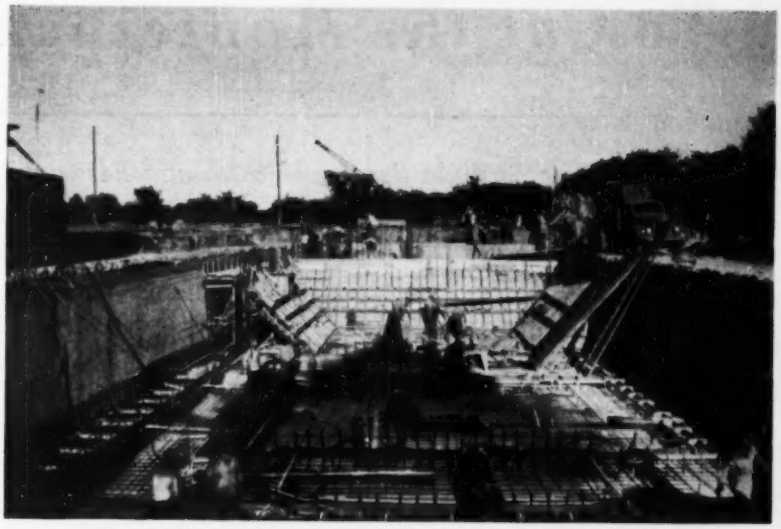
How the Treatment Operates

Under normal operation, the raw water from the Red River of the North is pumped into the south half of the remodeled mixing chamber where pre-chlorination takes place. A flume conducts the water to the Accelators through valved 18-inch lines. The chemicals are added through feed lines from the dry chemical feeders to the hood of each Accelator where thorough mixing and coagulation takes place. The clear treated water is removed from the surface around the outside of the central hood by perforated launder troughs and the heavier floc returns to the bottom of the Accelator hood where it is drawn into the central portion and reused. Each Accelator has four slurry concentration chambers where the spent slurry is drawn off automatically through discharge lines controlled by electric time clocks. A new 24-inch drain line has been constructed which carries the blow-off from the Accelators and the filter wash water directly back to the river some distance below the raw-water intake structure.

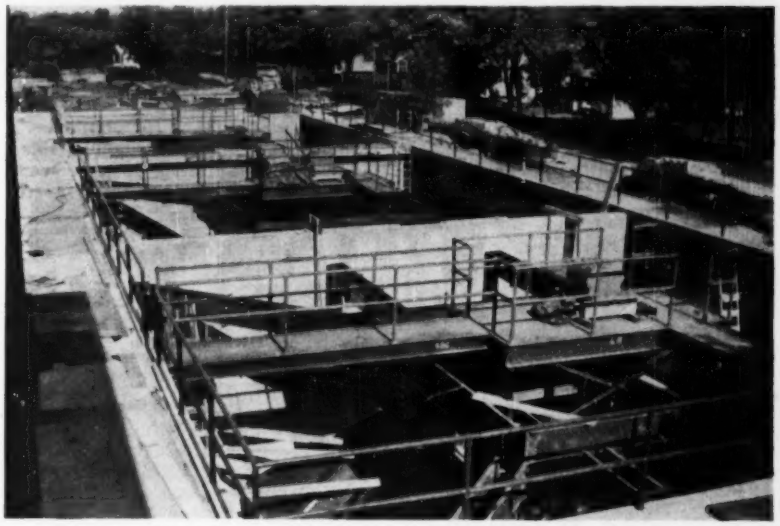
The effluent from the Accelators enters a flume directly beneath the raw-water flume which conducts it to the primary carbon dioxide contact basin. From here it goes through the south half of the west portion of basin No. 1 and enters the post-chlorination contact basin. It then flows through an opening into the north half of the No. 1 basin to the east end where it flows around the end of a baffle wall to the west end of the north half of the No. 2 settling basin. It then flows around the east end of a baffle wall to the west end of the east half of basin No. 2 where it enters the secondary carbon dioxide contact basin. Here the water flows over a weir into a flume around the outside of the Accelator building to the filter gallery.

Future Plans

Plans for the immediate future include another raw-water intake line which will increase the raw-water input by 5 mgd. A new 18- or 24-inch feeder main will be laid from the plant to the north end of the city to provide better service for the increased demand there. New overhead storage tanks of at least another million gallons are planned to supply the central part of the city and the new industrial district which is being developed to the west. More clear-well storage at the plant would be of great value in leveling off the peak loads there and would make for more uniform flow during treatment.



Form work gets under way, preparing the basins for the Accelators.



Here are the basins nearing completion, with mechanisms in place.

And here is the completed structure, closed in by a new brick building. The old headhouse is in the foreground at the left.

To Cut the Municipal Fuel Bill

New formula developed to show where savings can be made
Special efficiency unit is recommended
Savings of $1,500,000 annually deemed possible for New York

By PERCIVAL R. MOSES
Percival R. Moses & Associates
New York, N. Y.

THE constantly increasing cost of the municipal government of the City of New York and the resultant increased taxation caused William O'Dwyer, former Mayor of New York City, to appoint a "Mayor's Committee on Management Survey" to determine ways of checking this trend.

The Mayor's Committee retained a number of firms, each competent in its field, to study all major phases of the operation of New York City. Because of the significant annual expenditure for fuel, one of the studies selected dealt with the cost of fuel and heating services in city-owned plants. The author's firm was selected to conduct this phase of the Committee's investigation.

During the full fiscal year 1949-50, which was the base year selected, a total of $9,141,000 worth of fuel was burned in 2,371 plants in the 20 departments covered by the study.

The conclusions were that an annual gross reduction in operating cost of $1,578,000 could be achieved with a short-term investment of $4,169,000. During the period of amortization of this cost, the annual net saving, after fixed charges on the investment and maintenance, would be $888,000, with an increase in this figure to $1,347,000 after completion of the payoff period.

Specifically excluded from this survey were analyses of purchased versus generated steam, incinerator operation, the relative advisability of isolated versus central-station service, study of plants operated by the Board of Transportation, and Bellevue Hospital.

Steps in the Study

The first step in the investigation was to obtain a clear picture of the amount of different fuels burned, the number of plants and boilers operated by each department, the type of building, the occupancy, the building size, the type of boiler and fuel-burning equipment used, and other such pertinent data. This information was obtained from questionnaires sent to each plant.

From a tabulation of the data on these questionnaires, it was possible to determine typical plants. A total of 104 typical plants were visited and more detailed information was obtained. This information included building age, floor area, character of occupancy, hours of operation, type of fuel, method of fuel delivery into storage, labor charged against boiler-plant operation, number and type of boilers, number of boilers required for peak operation, combustion-chamber dimensions, pressure, firing methods, type of heating system, and the type of combustion and utilization instrumentation, equipment, and controls.

Twenty of the typical plants were given more intensive study which included measurement of carbon dioxide, stack-gas temperature, and draft to determine the combustion efficiency and boiler-load cycles. Where overheating was suspected, recording thermometers were installed in heated spaces, particularly in housing projects operated by the New York City Housing Authority and in schools operated by the Board of Education.

Upon completion of these surveys, the engineers determined the equipment changes which would be desirable in these typical plants to increase operating economy. In this connection, it was necessary to determine the minimum size of plant measured in terms of annual fuel consumption to which various devices could be applied economically.

A formula used to determine the foregoing was developed by Kenneth E. Sanger of the engineers' firm which provided this information, taking into account the capital investment in equipment; the interest and amortization period used by the city for standard short-term investment, including a 7½% net added return on the average outstanding investment; the average maintenance cost; the labor saving; the price of present fuel burned and the proposed fuel; the additional cost of electricity for operating the new devices, and the increase in efficiency.

This formula is:

$$T_1 = \frac{.1372C + M - L}{P_1 - (1 - S)(P_2 + E)}$$

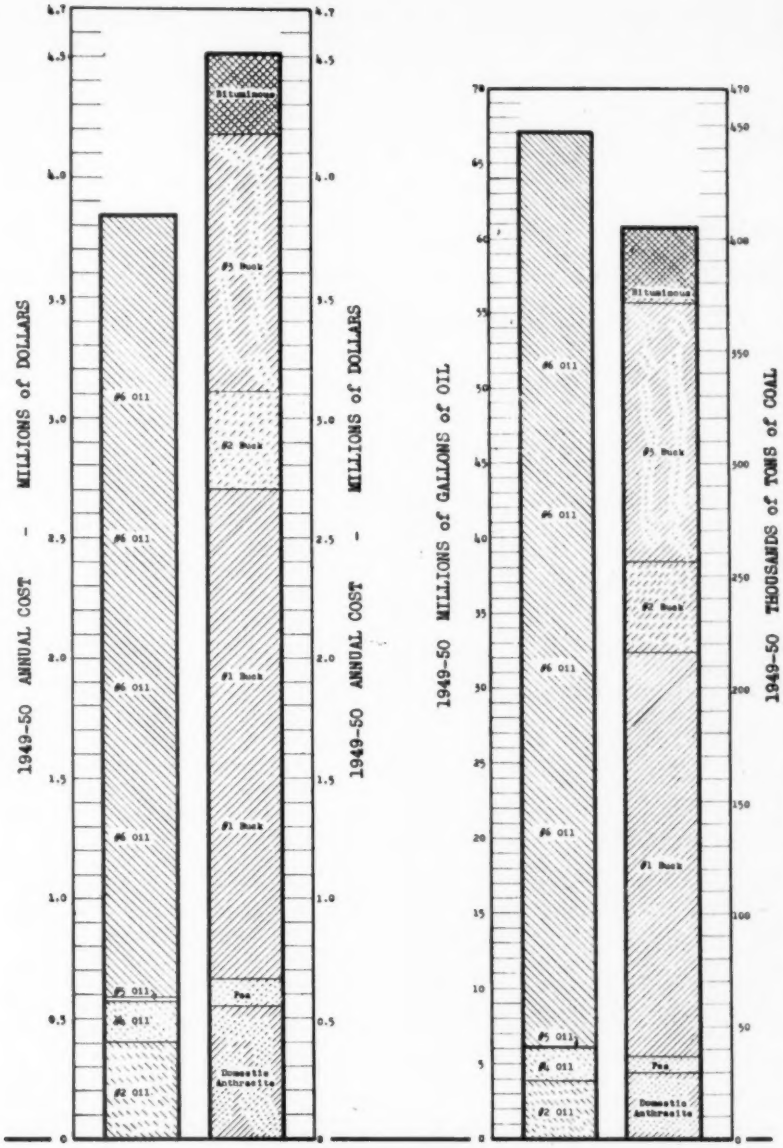
Where P_1 is the price per ton or gallon of the fuel presently burned, P_2 is the price per ton or gallon of fuel proposed; T_1 is the number of tons or gallons of annual consumption of the present fuel; E is the additional electricity cost per ton or gallon; C is the capital investment required for the changes including material, labor, engineering, contingencies, profit, and overhead; M is the annual maintenance allowance; L is the annual labor saving in dollars, and S is the ratio of fuel saved and is equal to $\frac{T_1 - T_2}{T_1}$ where T_2 is the estimated annual fuel consumption after conversion. This formula would have to be modified if the amortization period and interest rates were not those used for the City of New York. Using this formula to find the "Application Point" the number of plants in each category above this point were counted to determine the total number of plants in which the proposed change was economical.

Recommendations

In many instances it was recommended that the use of domestic-sized anthracite be discontinued and that No. 1 or No. 2 buckwheat be employed with the use of the deep firing or standard firing forced-draft systems of combustion, or that conversion to retort stokers be made. Similarly, where economically feasible, recommendation for the conversion to heavier oil was made.

These specific recommendations also included the application of heat-timing and weather-sensing devices, balanced draft-combustion controls, electric eye-combustion controls, and other proved aids to increase the efficiency of boiler operation. In some of the large housing projects, the use of a centralized telemetering-control system to control steam temperature in various buildings of a housing project from a central point was recommended to make possible both labor and fuel savings.

In addition to these recommendations, certain other special recommendations dealing with maintenance were made. These included the regular cleaning of boiler-heating surfaces, checking of stack temperature and carbon dioxide content of stack gases, reduction of air leaks in the combustion spaces, applica-



PLANTS OPERATED BY THE CITY OF NEW YORK
Comparison of Total Fuel Costs and Consumptions During 1949-50

tion of barometric dampers, regular cleaning of No. 6 oil preheaters, and conversion of gas-fired central-heating systems to oil-fired where conditions permitted.

Engineering Supervision Bureau

In order to implement the findings of the survey and thereafter to monitor fuel use in these city-operated plants, the report recommended the establishment of an independent engineering supervision bureau which would collect data on fuel consumption on a regular program, investigate in order of their importance those plants in which economies could be effected, prepare rough plans and specifications for changes required for submission to the departments concerned, and to follow up and carry out the necessary steps to decrease cost of operation. In addition, the engineering supervision bureau would institute, where necessary and feasible, training programs for operating personnel to provide the city plants with more highly trained boiler-room personnel who would be aware of the conditions leading to lower operating cost.

It was also recommended that the four departments burning the most fuel, namely the Department of Hospitals, the Board of Education, the New York City Housing Authority, and the Department of Marine and Aviation have separate efficiency units established to work in conjunction with the Engineering Supervision Bureau. The annual cost of the Engineering Supervision Bureau was estimated at $146,250 with an additional $80,000 annually for the departmental efficiency units previously mentioned. The savings indicated at the beginning of this article have had these costs deducted from them, so it is obvious that such efficiency units would easily pay for themselves from their inception.

General Comments

The report indicates that in general the operation of the plants under municipal direction was as good as the average privately operated plant and considerably better than some of the plants in larger privately controlled public institutions. On the whole, personnel engaged under civil-service requirements are at least as good as the average, and it was the consensus of the engineers who inspected the plants that by intensive supervision from the top and recognition of the results a saving as great as the saving obtained by changes of fuel and other mechanical equipment could be obtained.

Municipal Government Taught in Miami Beach High School

MIAMI BEACH High School seniors are becoming better acquainted with their city government through a new program coordinated by Hank Meyer, director of the Office of Public Relations.

The government actually "goes to the classrooms" when directors and representatives of each city department address the students to explain their department's operation, services, costs, and how it affects the individual citizen. This activity is conducted in cooperation with Miss Annie Boyd, head of the Social Studies Department at the high school.

About 300 seniors attend each lecture and are provided with an eight-page bulletin, outlining the entire operation of the municipal government. The series of lectures and panel discussions are nonpolitical and nonpartisan.

Assistant City Manager Morris N. Lipp presented an introduction to city operation in the first of the series of bi-monthly lectures planned for the next four and a half months. Chief Building Inspector O. M. Pushkin discussed the Building Department in the second classroom session.

At the conclusion of the series, the senior student body will elect a "Mayor" and "City Councilmen," who will appoint a "City Manager" and other municipal heads. The student officials will then take over City Hall for a day and assist in the administration of Miami Beach's affairs.

Members of the senior class will then write essays on their ideas, suggestions, and criticisms as a summary of the practical government course.

Build It Quickly

and Build It Well

Paving improvement in downtown Roanoke, Va., has to meet rigorous standards—concrete pavement selected, built to unusual specifications

By H. C. BROYLES
City Engineer
Roanoke, Va.

The battering inflicted on older street surfaces by more and heavier traffic is apparent on this Roanoke, Va., thoroughfare.

A fast and good job of paving, however, makes a world of difference.

WHEN A CITY has a street in its downtown area that carries a lot of traffic and needs rebuilding, the engineer in charge has to do a good job, and do it in a hurry. Even when work is done at top speed, it goes along far too slowly for the merchants and public who have an understandable dislike for the inconvenience.

We faced such a repaving improvement in our downtown area where an old brick pavement, supported on a sand base, was giving us a lot of trouble. The brick surface had become very irregular, leaving the street rough and bumpy. It lay on a flat grade, with some portions sloped no more than 0.3%.

We get heavy rains in Roanoke, and when they fell, they frequently left this street in a mess. Moreover, the street looked sloppy, and was hard to keep clean. Try running a sweeper over an uneven brick street sometime and see what sort of results you get. Our City Council decided to repave it, and to do the job so that it wouldn't need repaving again.

The street is only 30 feet wide between curbs and carries a large volume of truck traffic. Our master plan calls for this street to be widened 10 feet on the north side, which we hope to accomplish within the next five years. In the near future, we will have a modern four-lane bridge at the east end of the street, and we can expect at that time this will make the street one of the most heavily used arteries within the city.

Subbase Strengthened

If there is anything that engineers have learned about building roads and streets in recent years, it has been the importance of the subgrade. Let that be weak, and no matter what you cover it with, you have wasted your money. So our first step was to remove the old pavement and place a 4-inch compacted-gravel subbase on a well-compacted subgrade.

Next, we had to supply a pavement heavy enough to carry the load. We selected a 9-inch plain concrete slab, using concrete that develops a strength of 3,000 pounds per square inch at seven days. Our experience in this area has shown that we get better results if we make our concrete from crushed limestone, so we specified it for the fine aggregate.

Air Entrainment

We used an air-entraining agent in the concrete also. While Roanoke is not troubled with bad icy conditions that necessitate an excessive use of salt for snow-removal work, we like the toughness and weather resistance that air entraining provides to the concrete. The agent provided 3% to 6% entrapped air in the mix.

We simplified the construction as much as we could. High early strength cement made it possible to

pave and open the street within two days. We did away with wire mesh in the concrete. This was intended to supply a means of holding the slab together in case it cracked, and certainly a pavement surrounded by sidewalks and buildings is not going to go very far.

We used expansion joints only at intersections. This meant that in some places we had a maximum spacing of 600 feet between joints. Engineering studies seem agreed that frequent use of expansion joints is an unnecessary engineering precaution. The State of Virginia does not require any expansion joints at all in its pavement, nor do 20 other states. We place contraction joints every 25 feet so that the concrete can break into orderly sections.

For curing, we used a colorless membrane that sealed the water into the concrete. This gave a neat, clean job that the public liked.

Today, we have a street that will carry the traffic load, drain away the storm water, and allow our street-cleaning crews to keep it in neat condition without a great deal of trouble. Moreover, the public and the merchants can expect the street to serve them for a long time.

Why Business Is Increasingly Concerned With the Operation of Local Government

By THOMAS R. REID
Director of Civic Affairs
Ford Motor Company

BUSINESS TODAY is coming to recognize at least two good reasons why it should take an active, continuous interest in the affairs of government. One is moral, or ethical, in its implications. It is a growing feeling that no company, large or small, can afford to ignore a responsibility to the whole of society—a responsibility beyond the duty to make a better product at lower cost and to serve the commercial and industrial needs of our country. . . .

This consciousness of citizenship responsibilities is probably most apparent at the community level. Any company which sincerely wants the good will and respect of the community in which it operates or has offices must earn that good will by being a good citizen and good neighbor in that community. It must demonstrate a genuine concern for the welfare of the community.

Community Relations Committees

Ford Motor Company considers this activity so important that, in 19 of our plant cities, we have community-relations committees made up of our top company managers in each of those locations. In time, we will have such committees in all of our plant cities. The job of these men is to see that Ford Motor Company plays its part, financial and otherwise, in maintaining and improving the welfare of the entire community. Wherever a special community project seems to merit the attention of our Central Office, we are guided by the recommendations of the local committees.

Our people are encouraged to become active in civic affairs, to join worthwhile organizations and to provide leadership, if it is wanted, for various community projects. Although the company itself does not attempt to take sides in local issues, there are no restrictions on employees who want to become active politically as individuals.

Similar efforts are being made, on a larger or smaller scale, by a great many other companies.

A second and more compelling reason why business should take a greater interest in politics is simply that good government is good business. That might sound like a truism to some, but it apparently is not altogether understood by a great many businessmen, even today. . . .

As an automobile man, I'm especially interested in public-highway and -parking facilities. How government handles these problems has a very obvious effect on my business. At the same time, my company has a very direct stake in adequate police and fire protection, in building and safety regulations, in water supply, refuse disposal, and hundreds of other government services. Unless we help to determine the scope and quality of those services, we have little right to protest if they are not satisfactory. . . .

A good, well-run community with adequate schools, hospitals, and other community services is a highly important factor in employee morale and productivity. Surely it is not too difficult for any company to recognize its responsibility and its own best interest in helping to develop and maintain that kind of community—from a business point of view alone.

Business thrives under good government, with good services. But it cannot expect others to carry the burden of providing good government. If business is to prosper and grow along with other segments of our society, if it is to make a maximum contribution to our total welfare, it must get into politics and stay. . . .

The Priceless Freedom to Choose

Unlike many other people, we in America are to a very large extent masters of our own destiny. Within limits, we have the power to shape and direct the conditions under which we shall live our lives. And, to a degree unknown anywhere else, we have the priceless freedom to choose. One of our great dangers is that we may lose these privileges not from abuse, but from lack of use. Thomas Jefferson said it well, and his statement still stands:

"I know no safe depositary of the ultimate powers of society but the people themselves; and if we think them not enlightened enough to exercise their control with a wholesome discretion, the remedy is not to take it from them, but to inform their discretion by education."

We've just had in the November election one of the finest possible lessons in American democracy. Let's make sure that what we've learned won't be lost.

From an address before the National Conference on Government of the National Municipal League, at San Antonio, Texas, November 17, 1952. The full text of Mr. Reid's paper appears in the December issue of the *National Municipal Review* (299 Broadway, New York).

New Officers of the League of Texas Municipalities

WITH A MEMBERSHIP of 562 cities and towns and a convention registration of over 900 officials and guests from all parts of the state, the League of Texas Municipalities held, at the Baker Hotel in Dallas, November 23-26, an annual meeting which provided a well-planned combination of general sessions and round-table discussions. Joining in the latter were the annual meetings of Texas City Managers Association, Municipal Utilities League, Texas City Attorneys' Association, Municipal Finance Officers' Association, Texas Association of Assessing Officers, Texas Public Works Association, Personnel and Civil Service Officials, City Planners' Association, and Association of City Clerks and Secretaries.

New officers elected by the League at the final session were Mayor Jim Wright of Weatherford, president, and Dr. J. L. Bullard, Mayor of Kerrville, vice-president. E. E. McAdams continues as executive director, with headquarters in Austin.

The 1953 convention will be held in Beaumont.

Light Track-Type Equipment Shows Usefulness in Sanitary-Landfill Operations

Nation's first light-equipment landfill demonstration held at St. Albans, W. Va., shows how this equipment can perform heavy-duty work

By B. F. BJORNSON
West Virginia State Department of Health Charleston, W. Va.

THE WEST VIRGINIA State Department of Health has for some time been wrestling with a problem which is undoubtedly common to most state health departments. How can one provide a practical sanitary method of refuse disposal (sanitary landfill) that smaller cities can afford?

Emphasis in the past generally has been on heavy, track-type equipment with attachments, costing usually between $6,000 and $15,000, as the only equipment capable of operating a sanitary landfill. It is not intended here to underrate or reflect unfavorably in any way on the heavier landfill machines. Where the population and work load are considerable and purchase can be financed, the heavy-duty equipment is almost invariably recommended for landfill use in West Virginia. The cities of Charleston, St. Albans, Wheeling, Morgantown, Fairmont, Clarksburg, and Elkins operate fills with heavy equipment successfully. As a rule, these landfills have functioned well, and city officials in many cases are planning expansion of the system.

Economics

Economics, including the high cost of local government, and the shrunken value of city income has too often discouraged the smaller cities. Almost invariably officials of smaller cities dropped their plans and greeted recommendations to purchase equipment with virtually a blank stare, when they learned that the price tag ranged between $6,000 and $15,000.

In an attempt to assist these smaller cities (reports indicate that over 75% of cities in the United States have a population of 10,000 or under), tests were run to determine if light track-type equipment would work, with minor limitations, under the sanitary-landfill method. The West Virginia Tractor and Equipment Company of Charleston donated the services of a sales representative, a John Deere Model MC tractor with Wagner attachments, and an operator for these tests.

The success of these initial tests and the interest of city and health-department officials, based on returns from a questionnaire, indicated that a demonstration was justified from the standpoint of expense to the cooperating equipment firms. Two demonstrations were held at St. Albans, W. Va., on June 12 and June 16, 1952, sponsored by the West Virginia State Health Department, with the cooperation of the West Virginia League of Municipalities. Mayor Gregory L. Funk, Street Commissioner Rufus Dunlap, Fill Superintendent Hershey Casdorph, and other St. Albans city officials should be singled out for their excellent cooperation and contribution to whatever success may be attributed to the demonstration. St. Albans, incidentally, has been operating a sanitary landfill very successfully since July 1950. Officials from various cities in West Virginia, the United States Public Health Service, and surrounding states attended the demonstration.

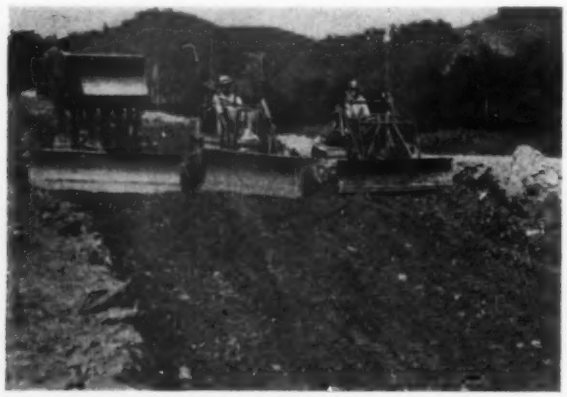
Demonstration Units

Equipment used in the demonstration consisted of the following tractor units:

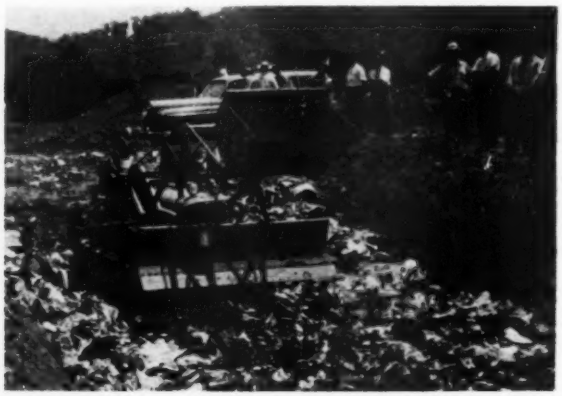
Equipment Model	*Approximate Cost*
Oliver "CC-3" with Ware loader and blade attachments	$3,400–$3,800
John-Deere "MC" with Wagner bucket and blade attachments	3,000– 3,400
American Tractor "GT-30" Terratrac with bucket and blade attachments*	3,600—4,000

The following manufacturers and distributors cooperated: The Oliver Corporation and its local distributor, Clyde Beckner, Inc., of Charleston, W. Va.; John-Deere Plow Company and Wagner Iron Works and their local distributor, The West Virginia Tractor and Equipment Company,

* American Tractor GT-30 unit had over 19% greater horsepower than other equipment. A comparable model, GT-25, is in the $3,000-$3,400 price range.



Three small tractors fit inside the trench previously excavated by an International TD-14 tractor with Drott Bullclam.



The American Tractor GT-30 Terratrac with bucket and blade attachments demonstrates how it can compact mixed refuse.

The John Deere MC tractor with a Wagner attachment applies cover to the compacted refuse.

Equally good work resulted from the performance of the Oliver OC-3 tractor to which was attached a Ware loader.

also of Charleston, and the American Tractor Corporation and its distributors, McCune & Company, of Youngstown, Ohio, and Case Driveway, Inc., of Huntington, W. Va. The three machines mentioned above were the only light tractors of their type available for the demonstration in the immediate area of St. Albans. There are undoubtedly several other makes of equipment of this or similar type that would also have proved satisfactory. Worthy of mention here is a rather interesting sidelight that bears out the frequently stated contention that a well-operated sanitary landfill may be practically fly and vermin free. The equipment distributors donated light refreshments that were consumed by those attending demonstrations on the landfill grounds proper. There was a marked lack of flies despite the fact that the food was exposed for long periods of time.

Preparation of Site

The disposal site was prepared in advance of the demonstration, using the International TD-14 tractor with Drott Bullclam attachment regularly used on the St. Albans sanitary-fill operation. (The principal limitation in the use of light equipment is the difficulty and time involved in excavating the trenches preparatory to receiving the refuse.) The trench thus prepared in advance was approximately 4 to 6 feet deep with a 30- to 40-degree ramp at one end, and approximately two to two and one-half times the width of the small tractors (approximately 15 feet), although such trenches need only be one and a half to twice the width of the machines in order that the equipment can obtain even compaction of refuse. The dirt excavated from the trench was stock-piled at a convenient location near the ramp of the trench where disposal operations were to proceed.

A load of mixed refuse was then dumped on the ramp of the trench. Each piece of equipment was given the opportunity to perform individually the spreading and compacting process on the refuse. When the refuse-compaction operation was completed, the three machines rotated in the applying, spreading, and compacting of earth covering over the compacted refuse. Although these procedures consumed slightly more time than would be required with heavy equipment, it was the consensus of those viewing the demonstration that such additional time required was not sufficient to be considered a restriction to successful operation with light equipment.

Demonstration a Success

Each of the three units was quite effective in performing the operation. The degree of compaction approached that obtained with the much larger equipment, and was entirely satisfactory for disposal purposes. Covering of the compacted material was easily accomplished by utilizing the stock-piled cover material.

It might be well to point out some instances where the light equipment might quite successfully operate independently of the excavation work of heavier equipment. In West Virginia, and in other coal-mining areas, abandoned strip mines, where the trench is already present and loose cover material is stock-piled nearby, will often furnish an ideal site for such a landfill operation. Landfills operated at such sites are strip mines, abandoned borrow pits, or quarries, and in hollows or valleys where loose cover material is available in the immediate area will not only provide suitable sites, but will also result in the beautification or reclamation of otherwise useless land for useful community projects, such as parks, playgrounds, parking areas, etc.

The limitation of the light tractors for excavation purposes, and the advisability of utilizing heavier equipment for trench construction, has been emphasized. It has not been explained, however, how borrowing or renting heavy equipment for occasional short periods can prove an advantage. The trench construction by heavy tractors will free the light equipment in smaller cities for a variety of city jobs, such as loading dirt or cinders, alley clean-up, backfilling, light dozing, snow removal, etc. Thus a full-time operator would not be required for landfill operation alone.

United States Public Health Service personnel attending the demonstrations from Washington, D. C., and Atlanta Ga., included: J. W. Fitzpatrick, G. W. Ludwig, C. E. Gerhart, Dr. H. F. Schoof, Leo Weaver, and P. W. Purdom. Chief representatives of the manufacturers and distributors cooperating and attending were: W. F. Winkler, representing the Oliver Corporation; John A. Greear, of Clyde Beckner, Inc.; Ward Eister and J. C. Wall, of the West Virginia Tractor and Equipment Company; Bob Richardson, of McCune and Company, and O. C. Shively, of Case Driveway, Inc.

Enthusiastic Response

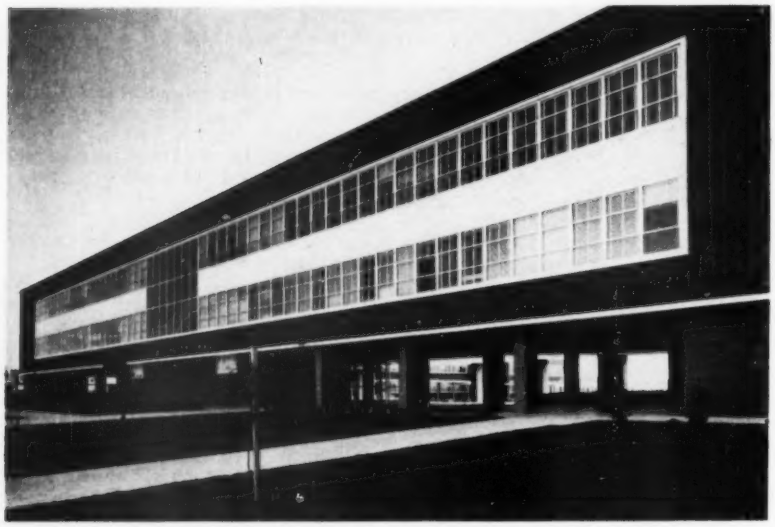
City officials attending the demonstrations were generally enthusiastic, and several indicated that landfills utilizing light equipment were to be proposed for their communities. Officials of larger cities now operating one landfill location with a heavy piece of equipment are considering purchasing one or more light tractors with a view to operating additional centrally located landfills where trenches are to be excavated in advance for all locations by the heavy tractor. Large cities throughout the United States, where the principal piece of equipment for the landfill operations is a dragline, clamshell, or power shovel, may well find that one or more light track-type tractors with blade and bucket attachments will serve satisfactorily as auxiliary equipment.

A Unique Civic Center

WHEN the City of Richmond, Calif., dedicated its new Memorial Auditorium, it thereby completed the last unit of what is perhaps the first really modern, multi-million-dollar Civic Center to be built in any American community. The realization of the Civic Center was a major achievement, but it has proved to be only the beginning of a series of plans and projects for this young, industrial, fast-growing city.

DURING WORLD WAR II, Richmond, a young industrial community located on the San Francisco Bay, was chosen because of her many favorable factors to play a major role in the shipbuilding program. One fifth of all Liberty Ships built during the war came out of the Richmond yards. The population of the city jumped from 23,000 to 110,000. Richmond did not grow—it exploded. Her 1950 census gain set a national record.

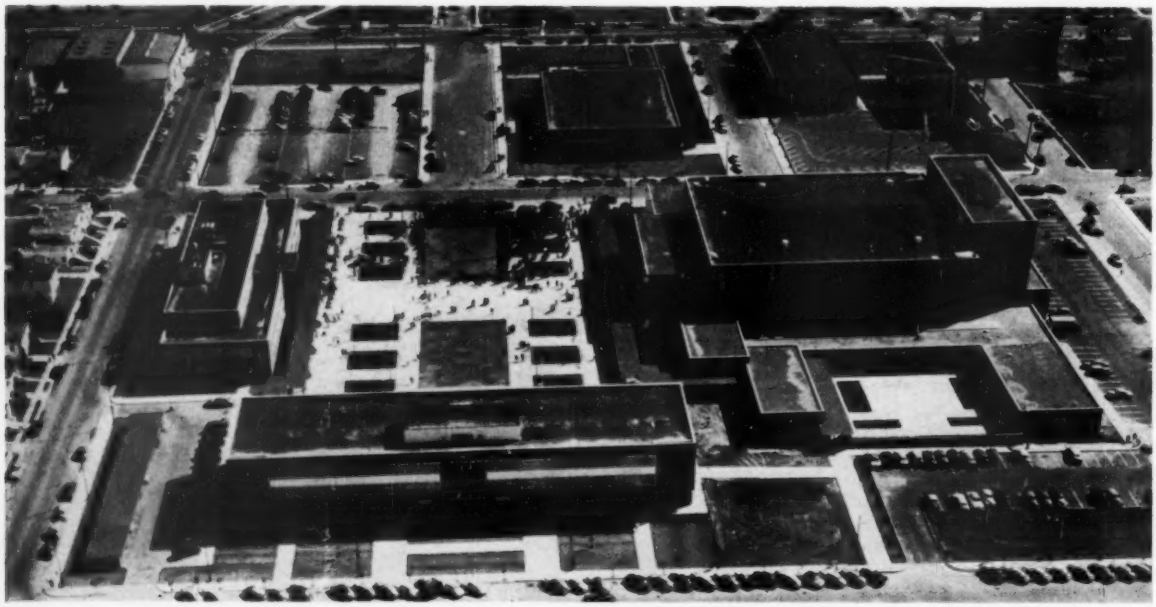
When the war ended, city officials, businessmen, and labor leaders, having failed to get help from Washington to meet the gigantic task of reconstruction, decided that whatever was going to be done to get Richmond back on its feet would have to be done by the people of Richmond themselves. Even more important than the immediate problem of providing jobs was a vital need to lift the morale of the people to give them some civic pride.



A close-up view of City Hall, for which brick, aluminum, and glass construction was used to reduce maintenance costs.

Community Support Received

To the voters in 1945 were presented plans for an ambitious undertaking — the construction of a civic center in which all the facilities of the city government would be concentrated in one compact area, in several buildings, surrounding a plaza with lawns, trees, and flowers. Despite the skeptics, the people of Richmond voted 5 to 1 to float a $3,850,000 bond issue to finance the project. The immediate sale of the bonds at a low-interest rate and the quick completion of plans and awarding of contracts not only saved hundreds of thousands of dollars in future interest charges, but also assured the community that the bond money would not lie idle and dwin-

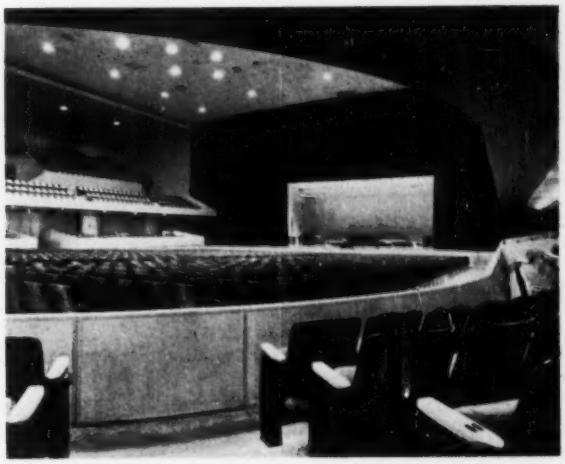


This aerial photo shows Richmond's new civic center, designed by architects Timothy L. Pflueger and Milton T. Pflueger. At the right is Memorial Auditorium, with adjoining Art Wing, under the supervision of the Recreation Department; behind the Auditorium, slightly to the left, is the Library; at the left of the photo is the Hall of Justice, containing the central heating plant, and in the foreground is three-story City Hall, its first floor open and raised on piers.

For Richmond, Calif.

By WAYNE E. THOMPSON
City Manager
Richmond, Calif.

Lobby of the Auditorium, which has banquet facilities, seating capacity of 4,000, and several rooms for small groups.



Illustrating Richmond's fast growth is the fact that the former City Hall was no larger than the stage of the Auditorium.

dle away due to rising construction costs.

The civic center is located on six blocks of land in the residential area, one mile east of the downtown Richmond business district.

Advantages of Grouping Buildings

Architecturally, the buildings are designed as units, although actually forming one civic center. An advantage of such unit construction is that the buildings might be expanded in the future, if the need arises, in conformity with the general architectural design.

The citizens of Richmond, through this bond issue, wisely elected to consolidate all city activities into one superblock. This convenient arrangement made possible many savings in operation expense, such as in utilities (particularly in central heating) and maintenance as well as in duplication of equipment installations. The erection of such a comprehensive project also prevented something most other cities wish they could have avoided—that is, the piecemeal growth and scattered, nonuniform municipal buildings throughout the city.

Facilities Convenient

This superblock arrangement, with its accompanying facilities accommodating 1,000 automobiles, makes it convenient for persons who come to it by car from outlying areas. All major cultural activities of the community take place within a few hundred feet of each other. As a further convenience, these facilities have made it possible for many county activities to locate in Richmond. In the heart of the center is a spacious plaza which in itself can become an additional "outdoor

Good working conditions in City Hall, combined with the latest methods and equipment and conveniences for visitors contribute to efficient community service.

The Richmond library has a capacity of 86,000 volumes. Its children's section is equipped with special material and a trained staff to aid in the development of reading skills and interests of boys and girls.

room," suitable for concerts, rallies, and other gatherings.

City Hall.—The City Hall building is a three-story structure, the first story being open and raised on stilts. This feature not only gives the building added importance but also simplifies future expansion. The only enclosed area of the first floor is the glass-walled lobby, which can be reached from all sides of the building. The second floor contains the offices of the Department of Public Works, the Treasurer, the Auditor, and the Assessor. On the third floor are located the offices of the City Manager, the City Clerk, the Personnel Manager, and the Health Department. On this floor also are the Council Chambers, modern and efficient, with collapsible rear walls providing for expansion to accommodate overflow audiences.

Hall of Justice.—The three-story Hall of Justice building houses the Police Department, administrative offices of the Fire Department, and Courts and offices. A modern jail is contained within the building on the second floor. The third floor contains a gymnasium and classroom for the police force. A rifle range, a Civilian Defense Control Center, a Lost and Found office, and a central boiler plant are located in the basement.

Library.—The Library has a two-story reading room behind a glazed east facade, with periodicals and stacks on a mezzanine above work space. This is the first known glass-walled library in the country.

Auditorium.—Largest and most impressive of all the Civic Center buildings is the auditorium. Its adjoining art wing, under the supervision of the Recreation Department, has workshops, classrooms, and exhibition galleries grouped around an interior garden court. The auditorium is designed for multiple use, as the entire main floor can be tilted hydraulically from a main floor activity to a comfortable theater accommodation. The seating capacities vary according to the event, with a possible maximum of 4,000 persons. Other outstanding features of this building include: dressing accommodations for 100; pinpoint acoustical reception; hydraulic, cross-connected lighting switchboard; meeting rooms and kitchen.

The Civic Center structures are modern in design, of simple character, relying on mass for architectural effect without needless embellishment. The structures are faced with brick and the windows are trimmed with aluminum to eliminate excessive maintenance costs. The designs are generally consistent with the streamlined, modern businesses and industries in Richmond.

In terms of morale alone, the Civic Center has been a resounding success. "I swallow with pride every time I go out there," said one Richmond citizen. Other builders and property owners took a cue and constructed modern shops and remodeled old ones. Plans are well advanced for redevelopment and annexation to modernize and expand the city. A $72,000,000 high-level bridge will soon connect Richmond with the Redwood Highway, opening up an entirely new field for industrial, commercial, and residential development. Richmond now is first in tonnage among all San Francisco Bay ports, third on the entire Pacific Coast. It has the sixth largest school system in the State and is the ninth largest of 308 ctiies in California.

In September 1952, the Department of State made a documentary film about Richmond, dramatizing our handling of our post-war development and employment problems. This film is to be shown in foreign lands to inspire localities to try to solves their own problems without looking to their central government for help.

The Civic Center stands today as a memorial to the war dead, made possible by a community of citizens who also wanted to express their confidence in the future of the City of Richmond.

Copies of a folder—in color—further describing the Richmond Civic Center and its features may be obtained upon request to the Office of City Manager.

Recommendations for Controlling Dutch Elm Disease

SOUND RECOMMENDATIONS for control of the dreaded Dutch elm disease were made at a recent meeting of the National Shade Tree Conference by a veteran of several years of successful battle against the blight, Mr. T. T. Janosko, Tree Warden for the Town of Stratford, Conn.

Mr. Janosko pointed out that the Dutch elm disease is spread from tree to tree in two ways—first, it is carried by the bark beetles, which breed in the bark of trees infected with the disease; second, the disease is spread from tree to tree by the grafting of roots from a diseased tree to a healthy one. One large elm tree will breed a million beetles and it only takes one beetle to innoculate the tree with the disease, he declared. It is impossible to eliminate bark beetles entirely because many breeding places are inaccessible. The trees that are sprayed for protection, however, must be entirely covered with DDT insecticide so that as beetles light on them and pick up DDT particles they will die before they can bore into the crotch of a twig and thus infect the trees.

A Lawrence Mist Blower, purchased in 1947 by the Town of Stratford, has been Mr. Janosko's chief weapon in applying DDT to elm trees. He reported on his experience, as follows:

Stratford's Story

We used technical DDT powder mixed with Xylene and kerosene bringing it to 6% strength. We applied the first spray in 1947 when the leaves were half grown and the second spray when the leaves were full grown. That year we cut down and burned 276 elm trees of all sizes. In 1948 we applied the same sprays as in 1947 using an emulsion form of DDT. That year we took down 160 diseased elm trees. In August 1948, we noticed that the leaves were turning a bronze color. Upon investigation we found that mite was causing the trouble because the DDT we were using killed off the mite's natural enemies.

Now our problem was to find something to eliminate the mite. In the spring of 1949, we decided to apply dormant spray of 12% DDT with our Lawrence Mist Blower, in the hope that we would be able to check the elm bark beetle feeding. That year, we took down 60 elm trees. We applied the same treatment in 1950, and found 11 trees had Dutch elm disease. These were cut down and burned at the town sand pit. In 1951 we applied the same three sprays as in 1950, and took down only 10 elms.

In areas where the Dutch elm disease has just broken out, there is a good chance of wiping it out by the following actions:

1. Cut down the diseased trees and burn—do not give away wood for firewood.
2. Spray the surrounding area with a 6% DDT spray.
3. Remove the bark from the remaining trunk or stump.

The following spring start your spray program with a dormant spray of 12% DDT. Follow that with a 6% foliage spray when the leaves are half grown. Add a miticide to control mites. Apply a second 6% foliage spray when the leaves are full grown. With this program, you can keep the diseased trees to a minimum.

Phoenix Police Charge for Photo Copies of Records

By DENVER E. McWILLIAMS
Supervisor
Bureau of Identification and Records
Phoenix (Ariz.) Police Department

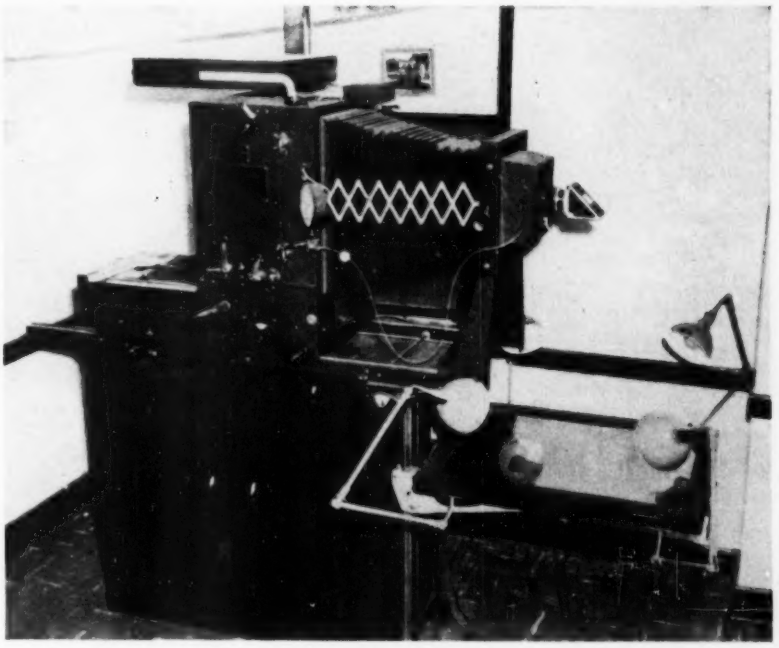
INCREASED police activities in the Phoenix area due to the city's rapid growth and annexation plan have created many new problems. One of these was the need for a photo-copy service. A survey of the situation was made last year and on the basis of recommendations made, funds were set aside in the budget for this year. Bids were called for and purchase was awarded to the Haloid Company, of Rochester, N. Y., and Los Angeles, Calif.

Saves Time and Labor

The machine was purchased primarily for the purpose of reproducing fingerprint circulars, reports, correspondence or check facsimiles, and for other police needs, and secondarily to help the general public to secure exact copies of auto-accident or property-loss reports without having to stand in line at a counter and laboriously hand-copy such data. Since its installation new and expanded uses have been found which will be both time and labor saving.

Photo-copy service has served to promote greater efficiency in the Traffic Records Section by reducing the number of clerical hours required in furnishing accident information to parties concerned. Since its installation on January 20, 1952, a large number of accident-report facsimiles have been reproduced for individuals and insurance companies or investigators at a fee of 75 cents per page, and the demand is increasing as the cost is much less and the information more readable than would be possible by hand-copying methods.

Fees so received are collected in accordance with an ordinance passed by the city council which established a schedule for fees for this and other services furnished by the Record Bureau. Collections are deposited in the general fund of the city. An accounting system is provided by a serially numbered receipt prepared in triplicate by bonded clerks. One copy is furnished the purchaser; one copy serves as the work order for the machine operator and is reproduced on the end of the photo copy to eliminate having to sort out the reports for delivery to the purchaser. This copy of the receipt is then attached to the original document to show which reports have been copied and to whom delivered. The final receipt form, or third copy, remains in the receipt book by serial number and is audited when the book has been used up. Daily receipts are delivered to the city treasurer with a serially numbered cash-receipt form, the original of which is returned to the Record Bureau with authenticating signatures to how receipt by the Treasurer.



It takes only 90 seconds for this Rectigraph to copy a document.

The machine purchased is a Commercial Rectigraph, No. 2, with a maximum copy size of 14 inches by 18 inches. Anything written, printed, or drawn may be reproduced to actual, reduced, or enlarged size. A color filter makes possible the reproduction of material regardless of color.

No dark room is required—development and fixing facilities are contained within the machine.

Focusing is automatic with the use of dials, measured in percentages, on the carriage of the camera and also on the copy board. Hand focusing can be done rapidly on a counterbalanced ground glass which swings instantly up out of the way of the exposure chamber which contains the sensitized paper and a curtain shutter.

"Squeegee" Rollers Remove Excess Developer

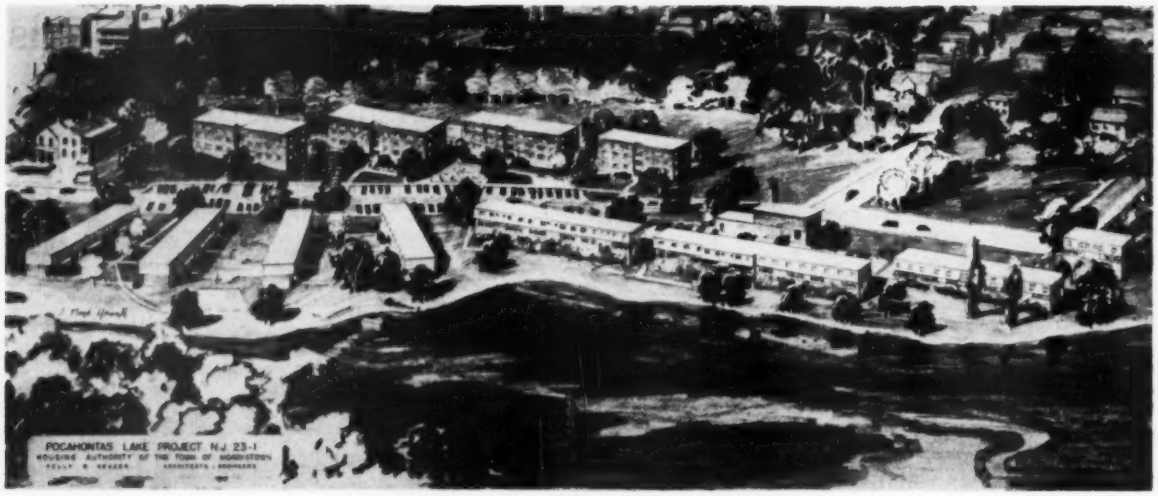
The subject material to be reproduced is placed on the copy board beneath a flat glass holder, which keeps it in place and aids in centering it. Proper exposure is made by adjusting the lens setting and timing. After exposure, paper on a 350-foot roll 14 inches in width is wound down by a hand crank from the exposure chamber into the developing tank, and a turn of a lever cuts off the paper print. The developer is in a coil developing mechanism which provides for the total submergence of the prints before they are delivered into the hypo tray by the operation of another hand crank. The prints coming from the developer are passed through "squeegee" rollers which remove the excess developer.

When the prints have been properly fixed they are removed from the hypo tray, washed and dried, then trimmed to size.

Cover Prevents Deterioration

All tanks are stainless steel. The developing tank has a cover which prevents rapid deterioration of the chemicals, so that they can be kept ready for instant use for a week or more without renewing the solution. This means a big saving in operation costs.

From all indications, this machine will soon pay for itself, because (1) it is instantly ready for use without fuss or bother; (2) it copies material instantly so that the material copied can be refilled or returned to the holder; (3) makes clear legible copies regardless of the background color or intensity of the writing; (4) turns out copies rapidly so that personnel is not tied up in dark-room operations, and (5) performs many jobs. Commercial copying fees will assist in paying for the capital outlay and reduce the dead expense of sorely needed equipment for other police activities.



A Public Housing Project

BLUEPRINTS REHABILITATION

By JOHN A. KERVICK
Director, New York Field Office
Public Housing Administration

WITH the dedication September 18, 1952, of its first low-rent public housing project, the Housing Authority of the Town of Morristown, N. J., (1950 population, 17,124), completed the opening phase of its slum-elimination, housing, rehabilitation, and redevelopment program which had its genesis in April 1938, following closely upon the enactment of the United States Housing Act of 1937.

The Authority did not apply forthwith to the United States Housing Authority for assistance in developing a low-rent public housing program. On the contrary, it began a study of the functions of such an authority, the relation of its statutory objectives to their community as of the day, and its potentials for the future, with respect to rehabilitation of substandard and blighted dwellings and blighted areas, and the re-use or redevelopment of any slum areas that might be adversely affecting the economic and competitive position of the community with other communities in the state.

The Authority early made a decision that any physical improvement it might undertake in Morristown should not be executed as a distinct

This structure has been condemned by the Board of Health in consequence of the public-housing and slum-clearance program being carried out by municipal departments for the elimination of blight in Morristown.

One of eight two-story structures, part of the new housing project in Morristown, N. J. Located on the shores of Lake Pocahontas, the project is part of a comprehensive plan for rehabilitation.

and segregated operation, separate from the other activities and functions of the municipality.

Reporting this conclusion to Mayor Edward K. Mills, Jr., the Commissioners requested the appointment of a Housing Advisory Committee to study with the Authority in detail the over-all problems of the town and their relation to the industrial and commercial as well as the residential interests of the community.

Such a committee was appointed by the Mayor in 1948. This Advisory Committee conducted a survey of the existing housing conditions in Morristown, but concentrated its attention upon the town's most notorious slum, "The Hollow." Among the things disclosed by the survey was that Morristown did not have to deal with a slum belt surrounding the commercial center of the city, as is the case in so many communities. It appeared that there were three slum areas located some distance apart in various sections of the town, and that the rest of the substandard housing was scattered thinly through what had been regarded as standard residential areas where these scattered substandard dwellings were beginning to depreciate values of standard properties in the vicinity.

By 1949, although the work of the Housing Advisory Committee so far as surveys and studies were concerned was substantially complete, it still continued to function as a liaison agency with the press, public officials, and civic bodies. Like the Authority, the Advisory Committee enjoyed the confidence of the citizenry, and working as it did with the Board of Aldermen, the Board of Health, and the Planning Commission, it had paved the way for the Authority to be received with cooperation and understanding by these long-established agencies of local government.

It was at this time that the final touch was given the surveys and preliminary studies of the Housing Advisory Committee which had largely been directed at the area known as "The Hollow," by the making of a detailed survey and study of areas not heretofore covered. Where previous surveys had simply classified a dwelling as substandard, in this survey a thorough dwelling-by-dwelling analysis of living conditions was made of 89 substandard dwellings under the direction of Percy H. Steele, Jr., Executive Director of the Morristown Urban League. It revealed that some 220 basic families, comprising 855 persons, many of whom were children or aged persons, were housed in garages, chicken coops, cold and wet basements, partitioned commercial buildings, and the worst kind of hovels. A further disclosure was that the median income of these families was but $2,598 per year.

With the desperate need for low-rent public housing in Morristown established beyond question, after consultation with the Mayor and members of the Board of Aldermen, the Board of Health, and Planning Commission, the Housing Authority filed with the Public Housing Administration, New York Field Office, a request for a reservation of housing units, which was approved in August 1951 for 94 units to be erected upon the site of The Hollow.

Site Acquisition

In the meantime, Robert L. Coutts, Jr., was engaged as Executive Director of the Authority; Kelly and Gruzen had been selected as architects, and project planning got under way. Concurrently, negotiations were started for the acquisition of the site in The Hollow. The town donated to the Authority a large portion of the site valued at $12,000, and loaned the Authority temporary funds to acquire the balance of the site.

An initial meeting between the members of the Authority and the Board of Health was held in February 1952. The Board of Health was represented by its president, Dr. Seymour S. Van, and by Dr. Harold Maxwell, Sherwood Atno, and Mrs. Laura Guteri. Mayor W. Parsons Todd joined the two boards as representative of the local governing body. He pointed out that the original agreement of the Town Board with the Authority, and of the Authority with the Public Housing Administration, provided that within a five-year period the Authority or the Town Board would eliminate a number of substandard units equivalent in number to the low-rent public housing units constructed by the Authority.

Boards Agree

There was complete agreement between the two boards and the Mayor that this requirement be met at the earliest possible moment by employing all the powers of the two boards and those of the Board of Aldermen. It was recognized by all the participants that such compliance with the equivalent elimination provisions of the United States Housing Act of 1949 offered the municipality the opportunity it had long sought for launching the rehabilitation-redevelopment programs which, under the leadership of the Authority, had been outlined for complete elimination of slums and which the Aldermen and the Planning Commission had been studying.

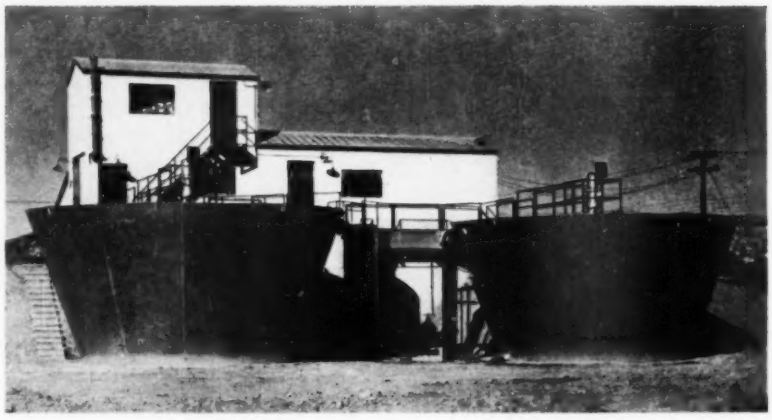
Among the items of agreement were (a) only the neediest families living in the worst slums would be accepted as tenants of the housing project; (b) as such families moved into the project, the dwelling accommodations that were vacated by them would be closed immediately against further use until by the cooperation of the landlords, the premises had been brought up to the standards of habitability of the American Public Health Association, the statutes of

(*Continued on page* 177)

The seven-acre site on which are located four three-story dwellings like those depicted below, eight two-story structures, and an Administration–Community Building, was once the worst slum area in the municipality.

This privately owned apartment house is being rehabilitated. Vacancies were created by former tenants moving to low-rent housing projects. After the building has been completely cleaned out to the studdings, it will be remodeled.

By D. J. SAUNDERS
Vice-President
The Permutit Company
New York, N. Y.



This Permutit water-softening plant uses a double-unit Spaulding Precipitator. It serves the City of Gallup, N. M., and has a capacity of 83,500 gallons per hour.

What Soft Water

NO ONE QUESTIONS the fact that the first duty of a municipality is to provide its citizens with an abundant supply of water which is safe to drink. However, a water that is safe to drink is not necessarily satisfactory for bathing, shaving, washing clothes or dishes, or for most commercial and industrial uses.

In general, iron and hardness are two of the most troublesome impurities in a bacterially safe water. Iron stains everything it touches. Hardness wastes soap and forms scale in pipes and heating units in the house, causing shutdowns in industrial plants and retarding production unless boiler-feed water is softened and properly conditioned.

Water containing iron will form deposits especially if the water comes into contact with air in a reservoir or storage tank. Then, at times when water use is high, these deposits are disturbed in the pipes and the public gets muddy water. Iron also favors the growth of various iron bacteria, known as "iron crenothrix." These growths have a tendency to break loose in clogging masses which frequently cause bad taste and odors.

Municipal Water Softening

Many municipalities overcome the annoyances, difficulties, and expense to the citizens caused by the use of a hard municipal water supply by means of a municipal water-softening plant. Over 650 cities situated in hard-water areas throughout the United States now soften their water supplies. They have found that the savings effected by softening the water have been several times the cost of softening. In other words, municipal water softening is not an expensive luxury—it is a sound investment.

There are two methods of softening a municipal water supply. These are the zeolite process and the cold-lime (or lime-soda) process. Both yield excellent results.

In the zeolite (or sodium cation exchanger) process, the water loses its hardness merely by flowing through a bed composed of granular sodium zeolite or an organic sodium cation exchanger. The process may be carried out under pressure, in which case the zeolite bed is contained in a closed steel shell. It may also be carried out in a gravity-type softener where the bed is contained in an open concrete, wood or steel shell. In either case, the principles of operation are the same. Furthermore, the water loses all of its hardness and emerges at what commonly is known as "zero hardness."

The pressure-type zeolite water softener consists of a closed shell containing a bed of granular zeolite supported by layers of graded gravel lying over an underdrain, or strainer, system. Raw water to be softened enters under pressure through the upper portion of the unit, is uniformly distributed over the surface of the zeolite bed, and passes down through it. The zeolite removes the hardness-forming elements—calcium and magnesium—as the water passes through it. This softens the water supply. The water, after passing through the supporting layers of graded gravel, is collected by the underdrain system, flowing from the outlet of the softener to the service line.

Generally, after a period of four to eight hours, the minerals in the water will exhaust the softening capacity of the bed. Its regeneration process consists of three steps: backwashing, salting, and rinsing. Backwashing serves to loosen, cleanse, and hydraulically regrade the bed. The salting serves to remove the hardness that has been trapped by the zeolite and simultaneously restore the bed to its original sodium state. Rinsing serves to remove the excess salt and soluble by-products—calcium and magnesium chlorides—and wash them down the drain. After the salt rinse, the softener is returned to service. These cycles of softening and regeneration may be repeated indefinitely. The wear and tear on the zeolite bed is very slight, usually under 3% per year.

Automatic Zeolite Water Softener

Before the advent of the Permutit automatic zeolite water softener in 1932, operators regenerated zeolite softeners manually at whatever time the capacity of the unit became exhausted. Since the demand for water in a municipality may vary from day to day, it often happened that the hardness-removing capacity of the zeolite unit occurred at night or at sometime when the operator was not present. With the manual types, such occurrences result in hard water getting into the mains, with consequent complaints from customers.

In the Permutit automatic zeolite water softener, a motor-driven multiport valve, coupled with electrical controls, serves to perform all of the operations automatically. Thus, at the end of the softening run, the softener unit is cut out of service. It is then automatically backwashed, rinsed, and returned to service.

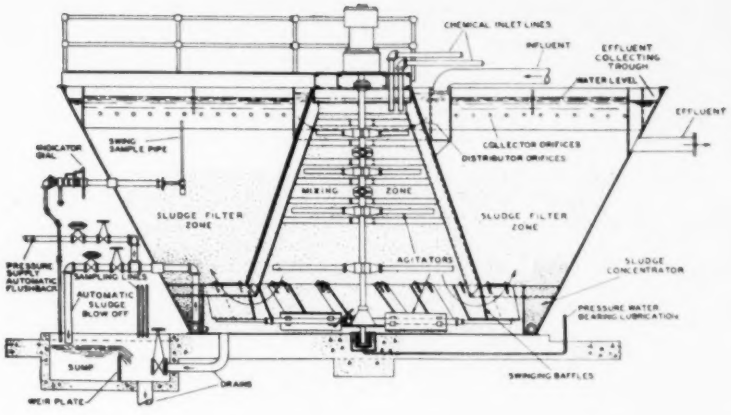
Most municipalities like water with a hardness no greater than 4 or 5 grains per gallon (85 ppm). With the zeolite water softener they can remove all the hardness from a portion of the water and then mix it with a proportion of hard water in order to reach the desired 85 ppm in the finished water.

It is good practice to supply these softening units in batteries so that when one unit is out of service for regeneration, the other unit or units of the battery carry the full load.

Cold-Lime-Soda Process

In the cold lime (or lime soda) process, the hard water receives lime or lime and soda ash, added in proportions and amounts that precipitate the bulk of the hardness in the forms of calcium carbonate and magnesium hydroxide. These insoluble precipitates are then removed by settling and filtration. In addition, a small dosage of a coagulant, usually aluminum sulfate, may be required in order to effect a good settling action and proper filtration.

In Permutit's (Spaulding) Precipitator, the unit is divided into an inner compartment and an outer compartment by means of sloping



A schematic presentation of the basic design of the Permutit vertical Precipitator showing the central downflow mixing zone and the outer upflow sludge filter zone. This type of design can be fitted to existing rectangular tank.

Means to Municipalities

walls. The hard water and the required chemicals receive thorough mixing while flowing downward through one compartment. On reaching the bottom, the flow is reversed so that the water passes upward through the other compartment, at a decreasing rate per square foot of area.

The chemicals react with the hardness of the water, precipitating it as a sludge of insoluble calcium carbonate and magnesium hydroxide. The upwardly flowing water passes through a floating blanket of sludge whose top remains well below the drain-off level. As new sludge is formed, the excess is drained off to waste through the sludge concentrators at a rate sufficient to keep the height of the blanket within specified limits. The effluent will usually contain less than 10 ppm of turbidity which is easily removed by filtration through sand or Anthrafilt filters. In addition to its use as a water softener, the Permutit (Spaulding) Precipitator can be used to coagulate turbid and colored waters.

Iron Removal

In clear, deep-well, iron-bearing waters, the iron is present as soluble ferrous bicarbonate. As such, iron is an undesirable constituent of many hard waters. Such waters are clear when first drawn but cloud on coming in contact with air, turning yellowish and finally depositing a yellowish or brownish precipitate of ferric hydroxide.

Such iron-bearing waters have many objectionable features. They have an unpleasant, astringent taste; stain drinking glasses, porcelain fixtures and laundered materials, and also impart a discolored or muddy appearance to coffee or tea.

In treating such waters in the Precipitator, all that is necessary is to aerate the water before it drops into the unit. If the carbon dioxide content is rather low, this aeration can be accomplished by simply allowing the water to flow over one or two steps or baffles as it enters the Precipitator. On the other hand, if the carbon dioxide content is high, a coke-tray or wood-slat aerator may be mounted above the Precipitator.

When using the zeolite process in softening iron-bearing waters, the soluble iron is removed simultaneously with the hardness by the base-exchanging properties of the zeolite. The zero hardness effluent is automatically mixed with enough bypassed water to produce an 85-ppm hardness in the mixed water. Note that in such cases, the bypassed water is filtered to remove the iron.

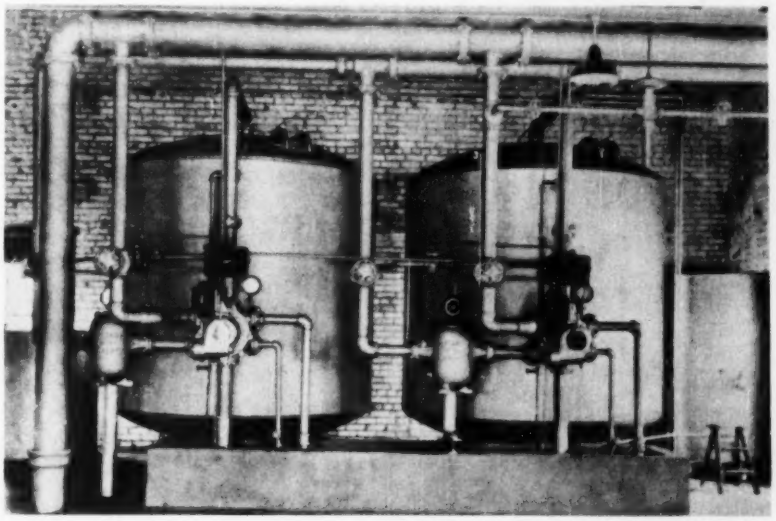
If the raw water is very hard and the iron content is only a fraction of a part per million, this practice may often be carried out without treatment of the bypassed water. In other cases, treatment of the bypassed water may be necessary in order to remove the iron content.

Corrosion and resultant red-water troubles may be controlled by various means. In some instances, treatment of the effluent with small dosages of a polyphosphate has been known to give good results. Adjustment of the alkalinity to give a zero or slightly higher plus Langelier Index is practiced for this purpose.

With the Permutit (Spaulding) Precipitator, the effluent produced is in chemical balance so that it is noncorrosive. Here, the lime removes all of the free carbon dioxide and the process is capable of adjustment so that effluents of different pH values can be produced.

With the zeolite process, adjustment of the pH value may be obtained by feeding small quantities of caustic or caustic and sodium silicate mixtures to the mixed effluent.

Perumtit has contributed to the improvement of water quality in many municipalities. These include installations at Sarasota, Fla.; East Lansing, Mich.; Hollywood, Fla.; Findlay, Ohio; East Aurora, N. Y.; Wapakoneta, Ohio; Sewickley, Pa.; Genoa, Ohio; Belleville, Texas; Taylorville, Ill.; Batavia, N. Y.; North Kansas City, Mo., and Newport, R. I. There are many others. All have found that softened water is a dividend-paying investment which will last for years.



PHOTOS COURTESY OF THE PERMUTIT COMPANY

This automatic zeolite water-softening and iron-removal plant serves the City of Bicknell, Ind. Its capacity is 600,000 gallons per day.

MIDDLETOWN, OHIO

Aid for Overloaded Sewers

City strengthens weak portions of its sewer system by unusual construction procedures; new treatment plant is also planned

By H. W. STARICK
City Manager
Middletown, Ohio

MIDDLETOWN, OHIO, has long since outgrown the sewer system installed many years ago to serve an unpredictable future population. The city managed to get by with this undersized sewer system until recent years, when new residential and street development aggravated the problem till it could no longer be pushed aside. Furthermore, since the volume of sewage has increased, the Ohio State Board of Health is insisting that Middletown's sewage be treated before it is discharged into the Miami River. The Board of Health order is part of a state-wide program for elimination of stream pollution.

Protection of community health is the most important problem. During periods of heavy rainfall, many householders are seriously inconvenienced, undergo financial loss, and risk health dangers by sewage backing up into basements. This situation has been gradually forced upon property owners located in the lower sections of the community. It did not exist when most of them purchased their properties. Rather, it developed gradually as additional sewers serving the higher areas of the community were connected with an inadequate sewer system originally designed to serve a much smaller area.

Each year the municipality is called upon frequently to provide aid in flooded areas. Sometimes it is necessary to flush streets and use other methods to clean up sewage that has erupted through manholes and catch-basins.

In the 1945 election, the citizens of Middletown voted to support a program to correct the sewer condition. A $1,500,000 bond issue was approved to provide for the construction of a system of sanitary main relief sewers. When plans were completed and construction bids received, it was found that because of construction cost increases, the sanitary relief sewer system would cost more than $3,000,000, and the entire program came to a halt in November 1947.

In 1951, the State Board of Health ordered the City of Middletown to provide adequate treatment of the city's sewage, and this increased the size of the over-all sewage project. It meant the construction of a sanitary interceptor sewer and a sewage-treatment plant. A preliminary report on the interceptor and treatment plant was a part of the report submitted by the consulting engineers in 1945.

At this time, the financial aspects of the sewer program were reviewed, and the 1945 and 1947 cost estimates converted to probable present-day costs. These costs estimates are

The 102-inch asbestos-bonded pipe, said to be the largest of its kind ever installed, is eased into the trench. Note the paved invert and the carefully prepared subgrade.

Workmen place a special bolted joint around two sections of the large new pipe.

based on information provided by Floyd G. Browne & Associates, consulting engineers, on the sewer program.

To accomplish this program will require $6,500,000 in addition to the $1,500,000 voted in 1945 for the Sanitary Main Relief Sewer Program. Under the statutes of the State of Ohio, municipalities are granted the authority to issue revenue bonds nd to provide for the debt service on such bonds by the collection of a sewer-service charge against all industrial, commercial, and residential users of the municipal sewer system.

Revenue-Bond Financing

No serious consideration was given to using additional general-obligation bonds since the statutory limitation on their use eliminates them as a source of funds for the sewer program. It was determined that Middletown's present leeway on such bonds should be reserved for other needed public improvements. The revenue-bond method of financing actually approaches a "pay as you go" plan since the users pay for the program as they use the sewers, and in proportion to the use they make of the sewers. Industrial, commercial, and residential users will pay a charge based on the actual water consumed and discharged into the municipal sewer system.

The consulting engineers made an analysis of water consumption of various users in Middletown and calculated a sewer-service-rate schedule that would provide enough revenue to permit issuance of revenue bonds necessary to complete the sewer program. Estimates indicate that the entire sanitary-relief-sewer and sewage-treatment program can be financed on the basis of a minimum sewer-service charge of $12 per year. Studies indicate that the majority of residence users would pay a sewer charge of between $12 and $22 per year. The charge for commercial and industrial users would be higher in proportion to the volume of water discharged to the sewers. A review of sewer-service charges in various Ohio cities shows a considerable range of rates, the individual community rate being determined by the size of the program.

First-Stage Construction

The first stage of construction consists of installing over 12,000 feet of Armco asbestos-bonded pipe ranging from 102 to 48 inches in diameter. Besides the normal sanitary and storm flow, usually encountered, this sewer will also handie a considerable load of industrial wastes from various types of manufacturing concerns.

There are three tunnels. The first was installed under the tracks of the Pennsylvania Railroad and was approximately 68 feet long. Armco tunnel-liner plates were used for the tunnel, which is 108 inches in diameter. The 96-inch-diameter asbestos-bonded pipe was threaded through the tunnel and the space between filled with grout. The other tunnels are under the tracks of the Baltimore & Ohio Railroad and the New York Central System. Both these tunnels will be about the same length and diameter as the first one.

Unusual Outfall Sewer

Another unusual idea incorporated into this job concerns the outfall structure. Instead of the more customary heavy reinforced-concrete device used for sewer outfalls, an Armco multi-plate structure has been used. The multi-plate structure consists of heavy corrugated curved plates bolted together. Essentially, what the contractors did was to pour two concrete footings and tie to these a 120-inch diameter multi-plate pipe 32 feet long. The 102-inch asbestos-bonded pipe was threaded through the multi-plate and the space between filled with grout.

When the sewage-treatment plant is completed, probably in 1954, the normal flow will go to the plant instead of out of the existing outfall. However, a special regulator is being designed to divert flow automatically during periods of heavy rainfall to the outfall instead of to the treatment plant.

This undertaking represents the first major construction in Middletown sewers in some 50 years. Plans were designed by City Engineer Roy Pochel, and were reviewed by Floyd G. Browne & Associates of Marion, Ohio, consultants for the city. F. R. Loomis is the resident engineer representing the consultants.

A 96-inch asbestos-bonded pipe is threaded through a tunnel. Tunneling was required to avoid disrupting railroad lines under which the new sewer lines were to be laid.

The new outfall goes together in sections. It is formed by bolting together prefabricated plates of corrugated iron.

City and school tax and water bills are written with the help of a Burroughs machine featuring direct multiplication and a typewriter keyboard.

Twice the Billing

in half the time

By J. OMER LAPLANTE
City Chamberlain
Plattsburgh, N. Y.

MECHANIZATION of tax-roll extension and tax-billing operations and also of water-meter billing and meter-customer accounting represent the latest new procedures established in our Department of Finance. Reasons for the transition were several.

To begin with, mechanization appeared to be the only satisfactory solution to the sudden doubling of our volume of property-tax work, which was the result of new statutory requirements making it mandatory to have a separate assessment roll and separate tax billing for the newly independent Plattsburgh City School District. Formerly, taxes for local school purposes were simply a part of the general city levy, with no separate identity.

In another quarter, meanwhile, a progressive water-meter installation program was developing rapidly. This produced the corollary responsibility for our department to keep pace, by instituting adequate water-meter billing and customer-accounting facilities. Unlike tax billing, however, this entailed no great departure from long-established procedures but required, rather, merely the introduction of methods to absorb the new work. Combining the demands of this expanding program with the time and labor problems developing in our property-tax work presented a situation to which the most satisfactory solution seemed to be "mechanization."

These new requirements became evident in time to put in four months working out the details of the water-billing and accounting procedures. Planning for the systemization of tax billing and tax-roll extension began a year in advance of the time when the double billing would become necessary.

Our city taxes are payable in six monthly installments. This locally familiar and popular arrangement was extended to the new separate school taxes by act of the Board of Education. The two taxes, therefore, remain payable simultaneously, as they always have been. Still another procedural hurdle, however, was the statutory provision prohibiting the "co-mingling" of School District and municipal funds.

Thus, our Department was faced with the responsibility of completing two tax billings in place of a former single billing, and of devising and establishing collection and accounting procedures which would retain familiar local methods while simultaneously meeting statutory requirements.

Nor was this all. It was apparent that another phase of our tax work also would be doubled in volume—that of posting, by hand, the tax payments to the tax rolls. Mechanization would be of no help here—only more time or more hands. Because of the separate billings, there was the prospect of extra cashier-window work or, at best, slower procedures.

Under methods used up to last year, there is no telling how many more employees would have been necessary to accomplish all the new work. There was even serious doubt, in the light of past experience with a single roll, whether it would have been physically possible to complete two tax rolls and billings under our tax timetable. In previous years, too, other office work generally came to a standstill in piles, which required further hectic weeks to clean up.

With two additional personnel and, of course, machine equipment, we were able to relieve another department of several weeks of work in January and February (on the old tax-roll extension job for a single roll); we completed two separate tax billings without interrupting other office operations; and, by now, we have found that our tax-office work has not fallen behind.

Our records indicate that it required a total of close to 1,000 man-hours in 1951 to prepare the tax roll (in another department) and to complete the tax billing in our department, in separate operations. Both operations, plus time for sorting and mailing, required fewer than 500 man-hours this year.

The machine selected for this work, and for our water billing and accounting, is a Burroughs tax-accounting machine with typewriter and direct multiplication, which was installed in March 1951. We would be remiss if we did not state here that the cooperation extended by the manufacturer's representative, Ralph H. Riddell, of Burlington, Va., was thorough and complete.

Water Billing and Accounting

Use of the Burroughs machine for water-meter billing and water-payment accounting follows generally standard procedures, with one possible exception. The direct-multiplication facilities permit the computation of the amount of the bill without reference to a chart, thereby reducing the margin for human error.

We are now billing some 800 meters monthly. In January 1953, at

the present rate of installation, the number will be 1,500. When the city is completely metered, under present plans, there will be 3,500 accounts. And if apartments, offices and other such subunits of many properties ever are metered separately, the number of accounts will be 5,000.

Our meter charges are based on step-rates, for monthly billing: a minimum charge of $1.50 allowing up to 7,500 gallons; 20 cents per thousand gallons, including the minimum 7,500 for the first 150,000 gallons; 15 cents per thousand for the next 350,000 gallons, and 12½ cents per thousand for all over 500,000 gallons. Revenues this year will exceed $50,000.

The billing operation provides for the distribution of consumption into one or more of the rate categories, the computation of the total charge and the addition, where applicable, of delinquent charges. The operator makes the necessary subtractions, multiplication, and additions via the machine, which prints the meter readings, the consumptions and total charges on a triplicate-meter bill, on the customer-ledger card, and on the billing journal. The amounts in each of the several columns are accumulated in vertical registers and printed on the billing journal for self-balancing at the conclusion of the billing. Accuracy of the meter-reading pick-ups is proved by adding the consumption shown on the meter reader's book for comparison with the machine totals.

By-products of the meter billing, besides reduction of labor and greater accuracy, include information for administrative and water-department statistics and controls, such as the volume of consumption in each category of rates and revenues resulting therefrom. This latter is a measurement of the adequacy of existing rates and is especially useful for further and continuing rate studies. Consumption figures are used by the water department to compare against its total consumption to gauge the effect and efficiency of the metering project.

Detergents—Are They Really to Blame?

THE ANSWER IS NO, according to the paper that highlighted the silver anniversary meeting of the Federation of Sewage and Industrial Wastes Association, held recently in New York City. No one challenged this conclusion from the floor of the meeting, but one engineer in charge of a big new sewage-treatment plant, where the foam in the aeration tanks has been high and annoying, stated frankly that he was now more confused than ever.

In recent years, foaming has been a troublesome phenomenon in the aeration basins at a number of sewage-treatment plants. In this same period, the housewives of America have switched from old-fashioned soaps to the new, synthetic detergents, and the sanitary engineers have blamed this switch for the trouble in the aeration tanks.

But at this meeting, William R. Gowdy, of the Procter & Gamble Company, presented experimental data showing that, in his opinion, this was not so. In large-scale tests at San Antonio, Texas, he showed that he could create this foam simply by reducing the amount of solids in the mixed liquor that went to the aeration tank. If the solids content was reasonably high, in the vicinity of 1,400 ppm (parts per million), no froth would form. If it dropped, the froth formed promptly.

No Froth When Solids Content Is High

The addition of detergents apparently had no effect. He added these detergents at the rate of 100 ppm for five hours, and then raised the concentration to 250 ppm for an additional two hours and still could not make the tanks froth when the solids were high. Yet he created the froth easily by lowering the solids.

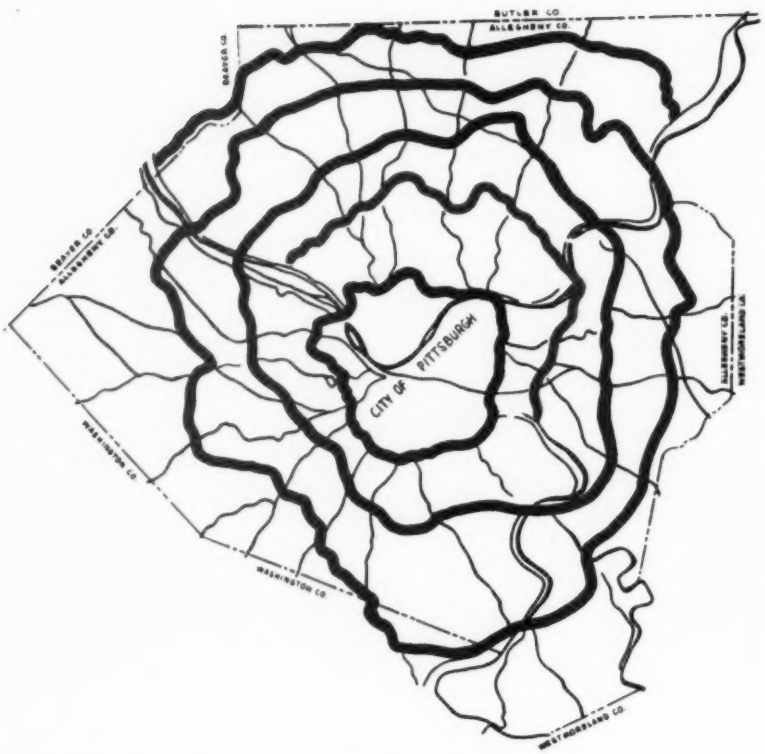
To confirm these tests, he added detergents at the rate of 100 ppm in a mechanically aerated activated-sludge plant in Bryan, Ohio, picking a day when the detergent content in the sewage should be high. This plant normally operates at about 800 ppm of suspended solids in the mixed liquor and seldom has froth. Again, the detergents had no effect, but when the solids content in the mixed liquor dropped to 200 ppm, froth appeared.

He then studied case histories of 10 other plants where frothing was a problem, and discovered that all have low solids counts in the mixed liquor. He quoted work by Professor Gail P. Edwards of New York University, stating that foaming had been encountered under conditions of low solids operation long before synthetic detergents became popular. He also quoted from the work of Eckenfelder and Hood, chemists and engineers of Ridgewood, N. J., stating that foam can be manufactured in an aeration tank at a certain stage in oxidative purification. All this, he felt, was evidence that synthetic detergents were not the cause of the annoying foam in aeration tanks.

The paper was discussed by William N. Wells, Superintendent of Sewage Treatment at San Antonio, Texas. He confirmed Mr. Gowdy's observation that foam could be produced by varying the solids content in the mixed liquor. He also stated that he felt concern over the dumping of so many boxes of Tide, the Procter & Gamble synthetic detergent, into the sewage when he knew his wife would have liked to have them at home.

Informal comments made by those present, but not expressed on the floor, showed some concern over the modified-aeration type of sewage treatment. This type of treatment seems to be causing trouble and must of necessity have a low-solids content in the mixed liquor.

These aeration tanks at San Antonio, Texas, contain sewage mix with 250 ppm of synthetic detergent added. The suspended solids count is between 2,700 and 3,000 ppm. Note the almost total absence of foam, even with detergent added.



Allegheny County's three belts and two semicircular routes, formed of existing winding roads. Each ring route is marked with color, visible both night and day.

Allegheny County's *Belt Roads Big Step* in Organizing Traffic

PITTSBURGH, PA., is an old city undergoing a tremendous redevelopment—new skyscrapers, elimination of blighted areas, new parks, multistory downtown parking garages, new steel mills and industrial facilities—but it suffers from hardening of the traffic arteries.

In fact, the Allegheny Conference on Community Development, an organization of civic planners which has fostered many of the remarkable post-war face-lifting projects in Pittsburgh, has called traffic congestion "the community's most serious problem."

City Traffic Engineer Donald M. McNeil once predicted that unless bold, new steps were taken to handle the traffic pouring into Pittsburgh proper from a metropolitan area with a population of 2,000,000 there would be so many cars on the streets in 10 years that traffic wouldn't be able to move.

One bold, new step has been taken, and it's already begun to loosen the traffic log jam throughout Allegheny County. The step is the creation of a "spider-web" belt-route plan in Allegheny County which enables motorists to travel from one suburb to another without passing through the downtown area.

Five belt routes, in the form of concentric circles or semicircles, have been laid out around the city at varying distances from its center. The routes use existing roads and thus have saved millions of dollars which might otherwise have had to be spent to construct belt highways such as the one built around Boston.

A feature of the "spider-web" system is the marking of the routes. Each has been given a color name—Red Belt, Orange Belt, Yellow Belt, Green Belt, and Blue Belt. Large signs, featuring the colors of the route, made from Scotchlite reflective sheeting so they can be easily seen both day and night, enable the motorist to zip along the belt routes with little chance of becoming lost.

Wilber I. Newstetter, Jr., executive director of the Allegheny County Transit and Traffic Commission which developed the belt route system, said: "The whole system depends on the signs. Many of the roads we selected for the belts have been little used except by motorists who knew the short cuts. At night in particular, motorists would get hopelessly lost trying to follow a belt route if it weren't for the signs. But the reflectorization of these signs is so effective that they literally jump at you when they're picked up by the car's headlights. You'd have to be blind to get lost."

Spoke System

Pittsburgh's and Allegheny County's peculiar topography with three rivers, high hills, and deep valleys segregates the communities within that area. There are 129 governmental units in the county, and it has been estimated that the county has more streets and highways than any area of the same size anywhere in the world. Almost all the main roads radiate from the downtown area like spokes of a huge wheel. There have been many small winding roads built between the spokes but few major highways.

Consequently, motorists have been used to driving in one spoke and out another in order to get from one section of the county or city to another. For years there was talk of building belt highways to connect various sections of the county, but the expense was prohibitive. There was also talk of putting up signs all over the county indicating short cuts to various areas. A few were erected, but they didn't work simply because motorists wouldn't trust themselves to be able to keep on the right roads.

It wasn't until the color-belt-route idea was conceived and put in operation that motorists were able to realize the potential timesaving of "back" roads. It is difficult to say whose idea the "spider-web" plan was. It has been germinating for two or three decades, but Joseph White, chief engineer of the Transit and Traffic Commission, recommended it to the Commission.

Commission Created

The Transit and Traffic Commission, created for Allegheny County by a special act of the State Legislature in 1947, is charged with developing a master traffic plan for the county and advising the 129 communities in solution of their traffic problems. It has tackled everything from parking regulations in small townships to consideration of a major revamping of the county's bus systems which would require the bus companies to build off-street loading facilities in the downtown area.

The Commission's staff had a tremendous job mapping out the belts,

Both cuts on this page show signs along the belt route. They are covered with Scotchlite sheeting; the discs are of colored Scotchlite, and the directions are in black. Insets show signs as they appear at night, under car headlights.

but the first and longest belt, the Orange Belt, 109 miles long, was put into operation late last fall. By June 1, 1952 all the belts covering 310 miles were posted and in use.

Three of the belts completely circle the city, while the other two are semicircles. The Orange and Red belts, in places, jut into other counties. The Blue Belt, 40 miles long, rings the city itself.

Because the belts use back roads they are rather winding and their principal usefulness is during rush or peak traffic hours. In an off-peak hour it wouldn't be sensible to go all the way around the county just to avoid the downtown area, but during peak hours the long way has definitely proved the quickest because of its relative freedom from traffic congestion.

Even during off-peak hours, however, the belts are often the short route between communities a few miles apart. For instance, the Blue Belt is the short route from Mt. Lebanon to McKees Rocks, which are some 10 miles apart. It would take much longer to take the direct route from Mt. Lebanon to downtown Pittsburgh and then the direct route from downtown to McKees Rocks. But before the Blue Belt had its reflectorized signs, it would have been impossible for even the most-painstaking traffic cop to explain the short cut, which has 20 or 30 turns in the 10-mile stretch.

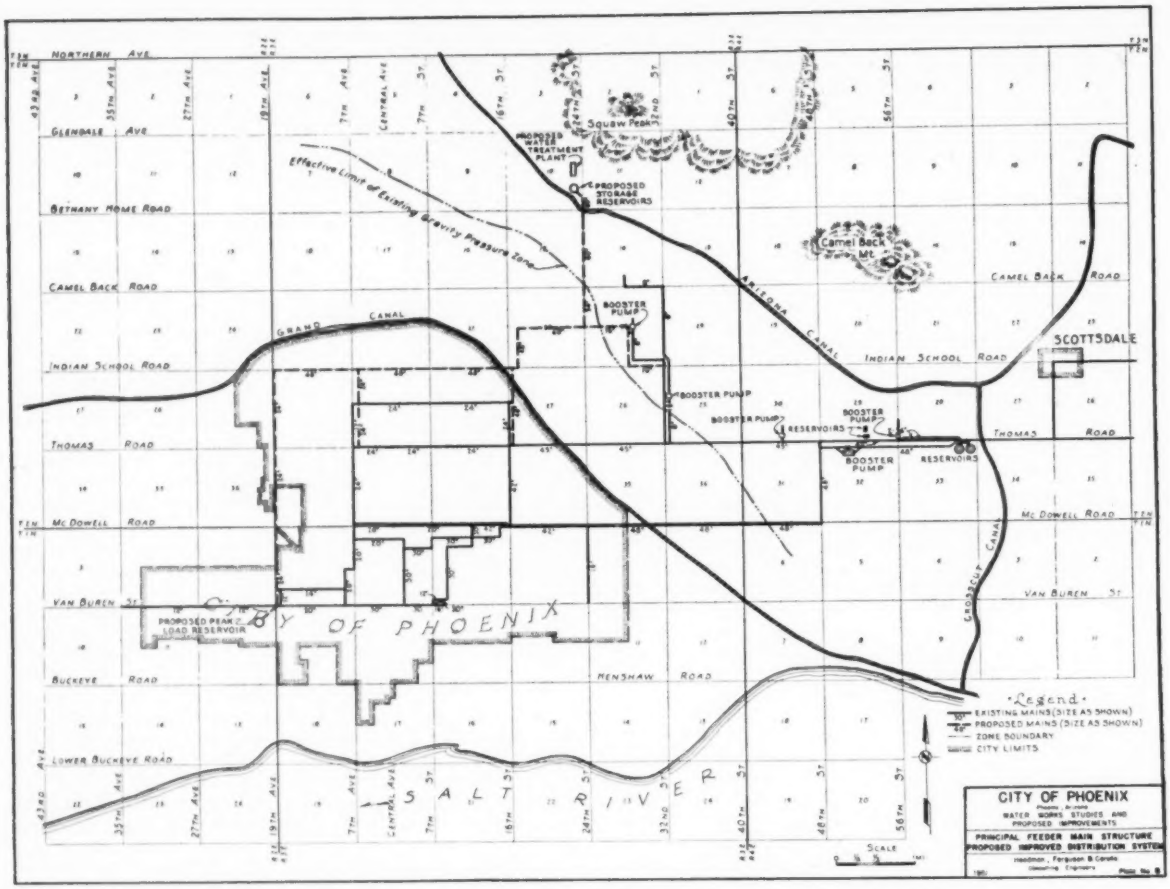
Belts Aid Police and Motorists

Bill Utz, the police chief of Crafton Borough, whose men patrol Routes 22-30, the main highway from the west coming into Pittsburgh, explained the usefulness of the belt system for policemen trying to direct motorists not familiar with the area. "We have a lot of drivers ask us how to get to Mt. Lebanon, for instance. Before the Blue Belt we had to try to explain a very complicated short cut or send the driver downtown on Routes 22-30 and tell him to turn back on Route 19. A driver can't miss following the belt signs."

Big signs telling how far it is to particular suburbs are placed on all radial routes intersecting the belts so that drivers have no trouble picking up the belts as they go into or come out from town. When people want to explain where they live, they now say: "Take Frankstown Road until you hit the Red Belt. Turn right and follow it for half a mile and you'll see my house, a white two-story frame with green shutters, on the right side."

One of the biggest helps to the development of the "spider-web" system has been the printing of 100,000 road maps with the belt routes clearly marked. It has taken time for motorists to explore the potentialities of the systems, but evidence is beginning to be received by the Commission which indicates that it will be a terrific success. One gas-station owner on the Orange Belt reported his business had increased 25% since the Orange Belt was posted.

The system used by the County Works Department to make the all-important signs is relatively simple and only takes a few minutes. Sign stock is prime painted and then covered with the Scotchlite sheeting. Both the sheeting and the distinctive-colored reflective discs are bonded to the sign in a vacuum applicator. (The same colored disc appears on all signs on the same route so that it is easy to follow.) Next the lettering and arrows are silk-screened on the reflective-sheeting background. Everything but the black letters and arrows reflects, which makes the directions stand out in sharp relief against the white background and the colored disc.



The principal feeder mains in the improved distribution system are shown above.

Phoenix Water Program Has No Time To Spare

New, extensive program of improvements to supply and distribution provide only 10 years of relief

By WILLIAM D. WILLIAMS
Headman, Ferguson & Carollo
Consulting Engineers
Phoenix, Ariz.

A $7,000,000 water-improvement program is currently under way in Phoenix, Ariz., that will eliminate most of the existing system deficiencies but promises only 10 years of relief from shortage problems if population continues to increase at present rates. The city's water-works problems are basic, commencing with that of increasing its supply of potable water. This aspect reached a crisis in the summer of 1951, culmination of a 10-year drought over the Verde River watershed, principal source of water for the city. The area served by the Phoenix Water Works embraces not only the corporate area of the city but also an outside suburban area about twice as large as the corporate area. The total number of people now served by the system is well over 175,000. It has been forecast that the population served could rise to 420,000 in the next 50 years.

Water use in Phoenix averages about 217 gallons per capita. This is comparable to the high usage characteristic of a heavily industrialized city. While Phoenix has some industry, such activities are scattered and are not predominant. The high average per capita water use in Phoenix results from abnormal summer needs operation of household evaporative coolers, bathing, and extensive lawn irrigation. Summer usage ranges

from 350 to 400 gallons per capita per day.

Phoenix utilizes both surface and underground sources of water supply. The most desirable and most abundant of present sources is the Verde River. Next in order of desirability is an underground source, or well development, near the suburb of Scottsdale. The city has a third source of supply—the aggregate production of a number of wells scattered throughout the city. They are not utilized, however, except in a dire emergency because of the obnoxious quality of the water.

Present Supply Capacity

The Verde River source of supply yields its water through an infiltration gallery with a capacity of 6 mgd (million gallons daily), numerous shallow wells along the river bank producing about 14 mgd, and a gravity sand filter plant with a capacity of 30 mgd. The Scottsdale well development yields 14 mgd while the aggregate capacity of the scattered emergency city wells is about 18 mgd.

Water from the three Verde River production facilities is normally conveyed by gravity through a 25-mile-long pipeline to storage reservoirs adjacent to the city's eastern limits. During times of high demand, the capacity of the line is increased by operation of a booster pump located on the line approximately midway between the river and the reservoirs. Water from the Scottsdale wells is pumped into the lower end of this same transmission main, while water from the emergency city wells is pumped directly into the distribution system.

The distribution system consists of more than 1,000 miles of mains in all sizes up to 48 inches in diameter. It is fed and normally pressure-energized by four reservoirs with an aggregate capacity of 55,000,000 gallons. During peak hourly demands the water from the reservoirs is boosted into the system by means of a motor-driven centrifugal pump.

The existing water works has a production capacity (scattered city wells not included) of supplying water at rates up to 74 mgd. The present improvement program is intended to increase this production to 114 mgd. Part of this increase has been realized already with the completion of three new wells in the Scottsdale area. The balance of the increased production will come as a result of the construction of facilities for which bids are now being called. They are as follows:

Part No. 1:

Extension of 60-cycle electric power to the existing and proposed Verde River installations.

Part No. 2:

Construction of a pre-sedimentation basin and raw-water-pumping station as an integral part of the present Verde River filter plant.

Part No. 3:

Development of a new source of water supply by withdrawing a variable mixture of Verde and Salt Rivers water from the the Arizona Canal, which is one of the principal canals of the Salt River Valley Water Users Association system.

Construction of the 60-cycle power line and substation under Part No. 1 will temporarily supplement and eventually replace the 25-cycle power now supplied to existing Verde River installations.

Construction of the pre-sedimentation basin and raw-water-pumping station under Part No. 2 will increase the aggregate production capacity of the Verde River installations by 10 mgd to a total of 60 mgd.

Construction under Part No. 3 will include a new pre-sedimentation basin, new raw-water-pumping station, and new gravity sand filter plant. Production capacity at this new source of supply, to be known as the Squaw Peak Filter Plant, will be 30 mgd. Also included for construction at this site will be a 20-mgd filtered-water reservoir with distribution system connections. It will supplement the 55 mg of existing filtered-water storage capacity.

Paralleling the construction of production and storage facilities will be extensive construction of mains ranging in size from 66-inch diameter down to 6-inch diameter. Included in the main extension program will be a three-mile length of 60-inch-diameter pipe reinforcing the present Verde River transmission line. There will be numerous large-size feeder mains also installed on an area-wide basis to distribute more efficiently not only existing water supplies, but the anticipated increased supplies following completion of the current improvement program.

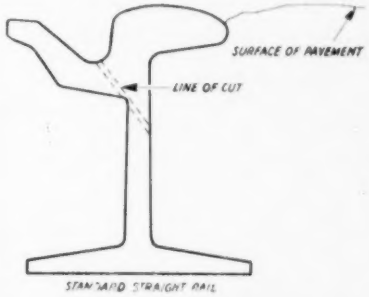
Slice Away the Streetcar Rails

IN MONACA, PA., Penn Avenue, one of the municipality's heavily traveled streets, needed resurfacing. Not only did this thoroughfare carry more than its share of traffic, but also it supported over 10,000 feet of abandoned streetcar track mounted high enough in the pavement to make it difficult to pave over.

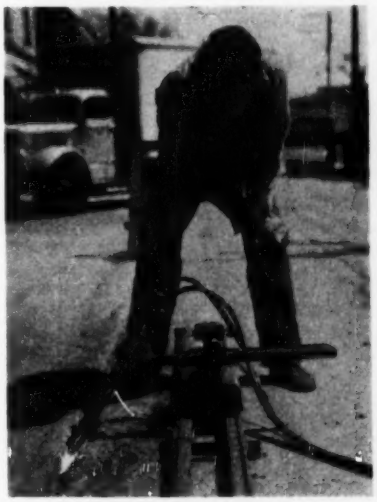
At one time, Monaca had tried to pave over these tracks. Workmen had filled the rail grooves with concrete and smoothed over the rail edges. Although this eliminated the skidding hazard produced by the rails when wet, it left sizeable ridges where the concrete-filled rails protruded above the street surface.

This time the city decided to cut away the protruding rails, and called on the services of a private welding-and-cutting shop to do the work. Before cuts could be started the concrete that filled the rail grooves had to be chipped out with a pneumatic hammer. The cut was begun with an Oxweld CM-30 cutting machine at an angle that allowed the removal of the entire track. This lightweight cutting machine is highly portable, and is ideal for cutting jobs like this one.

The crews making the cut arranged the flame so they could remove both flanges of the rail with only one pass. The cut was made at an angle of 45 degrees. The cut was started at the lowest point in the groove of the rail and proceeded to the back side, slicing off both lips. Without this cutting operation, the city would have had to remove the entire rail section. Curb sections were too low to permit the surface to be raised enough to cover the tracks. The removed sections were salvaged as scrap.



This diagram shows how the rails were cut. Note that a single flame cut, made along the broken line shown in the drawing, was able to loosen both flanges of the rail and allowed easy repaving.



This shows the cutting machine in operation. Two machines worked simultaneously, allowing the work to be continuous.

WHEN JOHN JONES decides to buy an automobile or build a house, he is a free agent (except, of course, for Mrs. Jones and the little Joneses) in his choice of what he will buy or build, how much he will pay for it, and from whom he will make his purchase. It's his money and he can be prudent or frivolous as he pleases. If he makes a mistake no one else will be hurt.

But it's not so with the officials of John's town. They obviously do not have the same freedom of action—and for very good reason. Such officials are not spending their own money but John's and his neighbors'—money collected to be used for the good of all. The town officials, therefore, are—and should be—limited to the extent and to the end that the citizens may be assured that collectively they will get the most and the best of what is required in each particular case for the lowest possible cost.

To assure this result, most states have passed laws (as has the federal government) requiring towns, villages, and cities, as well as their own departments, to let contracts only after public bidding and then only to "the lowest responsible bidder." These important and essential laws propound many problems, particularly in relation to the two common and most important requirements in public bidding, i.e., the place of specifications in public bidding, and a discussion of the term "lowest responsible bidder."

Perhaps this discussion will aid prospective bidders as well as public purchasing officers to a better understanding of these important phases of public bidding and contract letting.* I. V.

Some "Reasons Why"

Part 1—General Requirements of a Legal Specification in Public Bidding

When is a Specification Required?

IN THE ABSENCE of a statutory requirement that bids for "public work" [1] be let on a competitive basis or to the "lowest responsible bidder," [2] there is no requirement that specifications be drawn or used in connection with the performance of a public-works contract. It therefore is essential in each case to ascertain what, if any, statutory requirements exist.

In the case of municipalities, the absence of any statutory requirement for public bidding means that the officials are limited in their actions only in so far as such actions must be taken in good faith and in the best interests of the municipality.[3] Because the absence of statutory requirements for public bidding is rare and because where such requirements are absent, no real legal problem is presented, we will hereafter treat only with situations wherein "competitive bidding" is required, in one form or another, by statute.

Incidentally, the courts consistently hold that in the absence of legal requirements for public bidding, authorities who, without being required to do so, nevertheless advertise for bids are not required to let contracts to the lowest responsible bidder merely because they did so advertise.[4]

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WE PROCEED THEN to a discussion of the situation where there exists a statutory requirement that public-works contracts be let on the basis of competitive bidding. In such situations it may properly be said that there has been a determination by a sovereign (the state or federal government) to the effect that the right of the particular public body to freely exercise its right of contract is limited to the extent and to the end that the safeguards imposed are necessary to insure its citizens that they collectively will get the most and best of what is required in each particular case for the lowest possible cost.[5] It is such thinking which has motivated the various legislatures to pass the necessary statutes. In each situation brought to them to determine what is legal and what is intended by the particular statutes, the courts attempt to give expression to such thinking. That not all decisions on the subject are consistent with this basic thinking can be attributed to human frailties.

All of the safeguards intended to be set up by the various statutes, rules, and regulations are, and have always been, intended only for the protection of the taxpayers as a body politic. For this reason it is held that no action will lie in favor of an unsuccessful low bidder, no matter how meritorious his cause, or even to one who has, for one reason or another, not been afforded an opportunity to bid.[6] Where, however, such unsuccessful low bidder or other person aggrieved is also a taxpayer, he may, of course, bring the necessary action as a taxpayer.

As we have seen, only a taxpayer has the right of action such as a lawsuit which seeks to have an award of a contract to a particular contractor (or one who is to furnish material and supplies) set aside. The claim of the taxpayer in such case is that for one or more reasons hereinafter discussed, such award was not properly made and is, therefore, illegal. Such an action, if successful, will result in the following serious consequences:

1. If the successful action by the taxpayer is taken prior to the doing of the work or the furnishing of the material, the contract being null and void, will be set aside.[7]

2. If the successful action is taken after the work has been done or the material furnished but before payment is made, no payment will be made or enforced, nor will *any* type of action looking for or toward such payment be successful,[8] nor will one who has furnished materials be entitled to a return thereof.[9]

3. If the work has been done and paid for, there is some question whether the contractor will be required to make restitution, but there is no question that in such a situation the officials involved will be held responsible.

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AN EXAMINATION of the various statutes requiring public-work bids to be let out on competitive bidding reveals that not every such statute specifically requires that use be made of specifications. Regardless, however, of whether or not the particular statute contains such specific requirement, the courts consistently and universally hold that a statutory requirement for competitive bidding can only be satisfied by the use of a published legal specification.[10] The

* The footnotes and citations to this two-part article, of interest primarily to municipal law officers, will be furnished in mimeograph form to any subscriber to THE AMERICAN CITY on application.

in Public Buying

By IRVING VICHNESS
Attorney
New York, N. Y.

rationale of such reasoning has been stated as follows:

When by charter or statute a municipality can let its contracts to the lowest responsible bidder after advertising, an implied condition or restriction is placed upon the proceeding of the municipality • • • so that the action taken • • • shall be in such form and of such nature as in good faith to invite competition. Hence, persons bidding must take steps to determine, in advance, the nature of the improvement, the material of which it is to be constructed and to ascertain all those facts which are necessary to enable an intending bidder to comprehend the scope of the improvement and the nature of the supposed contract and bid accordingly. Therefore, something in the nature of a specification of material or of a plan and specification for the improvement must be adopted by the municipality prior to inviting bids.[11]

All of the rules attendant to the letting of bids apply as well to contracts of lease as to those of purchase.[12]

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Exceptions

NO RULE, HOWEVER, is complete without exceptions, and here too we have exceptions to the rule with regard to the necessity for the promulgation of specifications in public bidding. Different jurisdictions cover these exceptions in diverse ways. In some cases the exceptions are statutory. In other cases the exceptions are read into the statutes by the courts.[13] It is interesting to note, however, that whether the exception is specifically contained in a statute or whether read in by the courts, most of the jurisdictions are unanimous in the following described exceptions:

1. Contracts for personal services, such as lawyers, doctors, engineers, architects, or insurance brokers.[14]

2. Contracts for apparatus *when such apparatus is considered standardized equipment.*[15] In considering this exception it must be remembered that each jurisdiction will have its own opinions on both what is "apparatus" and what is "standardized equipment." The confusion which has grown around this exception is due to this variance of opinion in different jurisdictions.[16]

3. Contracts for public utility services to be supplied by a person or company having a legal monopoly thereon.[17] Good examples are telephone service or light contracts to a city or town.

4. Emergency purchases where such purchases are essential to the health, safety, or general welfare of the citizens of the community affected.[18]

5. For reasons that will soon be obvious, we will treat this next exception at some length. Thus, where the item to be bought is the subject of patent rights and, therefore, obtainable from only one source. There exists three different schools of thought as to whether or not in such situation the purchasing agency may procure such equipment.

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THE FIRST school of thought, known as the minority view, holds that the purchasing agency is absolutely prohibited from purchasing such items.[19] The theory behind this rule is that the mere fact of the existence of a patent destroys the possibility of competition and is, therefore, undesirable. They argue that if it should be determined by the purchasing body that a particular patented item must be had, the additional safeguard of specific legislative sanction should be imposed.[20] In some of these states the right to specify patented items is specifically granted by statute[21] which statutes have contained their own safeguards against favoritism, collusion, etc.[22]

The second school of thought, generally known as the "middle of the road" school, holds that

While the requirement of the advertising for bids and letting the contract to the lowest responsible bidder is a precedent to a valid purchase, it does not necessarily defeat the purchase of articles which are patented and can only be had from a single source and that it is only necessary for the city to advertise in the usual way for bids and accept whatever bid is made and if there is none lower and if in the opinion of the municipal authorities it is for the interest of the city to accept it.[23]

The third school of thought, and one which is known as the majority rule, permits a municipality, in good faith, to purchase patented items when it is determined that such items are necessary for the general well-being of the community.[24] As indicated, it is this latter view that is the most popular today.[25] It would appear that this theory is the most logical one in the light of modern technological progress. The argument for this school of thought is summed up in the following quotation from one of our leading authorities:

The true reason, it is submitted, for the rule upholding municipal authorities in specifying patented material of articles is that to hold otherwise would defeat the very purpose of the legislative provisions requiring contracts to be let to the lowest responsible bidder after advertisement. The purpose of these provisions is to protect the public interests. They do this by requiring bids to be advertised for and the contract to be let to the lowest and best, or lowest and responsible bidder. But this specific requirement is only incidental to the main purpose of protecting the public interests by securing the best advantages in the way of material and supplies at the lowest practical price. The authorities may, however, protect the interests of the municipality by refusing to contract for the thing patented if the price asked therefor is unreasonable or prohibitive, and if there is any fraud practiced it will vitiate the contract the same as it will a contract for an unpatented article. Consequently, in promoting and protecting the best interests of the municipality, it is necessary that the corporate authorities be permitted to specify patented materials or articles when it is clearly to the public interest to do so, after carefully considering the serviceability and cost of the material or article for which the contract is made. Then, too, it cannot be presumed that a provision to secure competitive bidding was intended to apply where competitive bidding on the thing required is impossible.[26]

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AN EXCELLENT EXAMPLE of this reasoning and its validity is the situation, a few years ago, that resulted from the development of parking meters. Since each manufacturer thereof had its own controlling patents, it was impossible to promulgate a set of specifications that would make the bidding open to all manufacturers. Whether such a situation precluded a city from buying was the question answered in the following quotation:

As appears from the statement of the facts the present stage of development of parking meters is such that it is impossible to draw structural specifications upon which competitive bidding may be based, as specifications particularly and exactly describing one meter would necessarily exclude others, thus precluding competitive bidding. The law does not require the performance of the impossible, so that where the property which a municipality desires to acquire is, as in this case, of such character that structural specifications cannot be drawn so as to permit competitive bidding based thereon, the omission of the structural specifications from the advertisement for bids does

not render the proposal to receive bids indefinite or invalid by reason of not providing such basis for competitive bidding.[23]

Where, however, an item which is the subject of a patent is available from more than one *distributor* (as opposed to a manufacturer) we have a competitive situation rather than an exception hereunder.[24]

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What is a Legal Specification?

HAVING DISPOSED of the exceptions to the necessity for the promulgation of a "legal specification," we come now to a consideration of the essential elements of a legal or open (the two being synonymous) specification, without which, as we have seen, there can be no meeting of statutory requirements for "competitive bidding." Definitions will not suffice.[25] Rather, we must keep in mind what is sought to be accomplished by the specification, namely, equality of opportunity to all bidders. The purpose of promulgating plans and specifications is to enable bidders to make intelligent bids, to insure competition by making the requirements of the proposed improvement definite and certain and identical for all, and to prevent favoritism and corruption in the letting of the work. Obviously, such plans and specifications must, therefore, be complete in every respect.[26]

While it is desirable, and in many cases absolutely essential, that the specification be complete in every detail, there are exceptional circumstances in which this rule may be waived. Thus in one particular case where the amount of each item to be furnished and the time for delivery of such item was left blank, the court upheld the specification on the ground that all of the bidders were bound by the same lack of information and that, therefore, there was nothing either unfair or arbitrary in respect to such specification. [27] In another case where the specification gave full and precise information to prospective bidders as to the nature of the contemplated work but permitted each bidder a choice as to the precise way in which the requirements of the specifications were to be carried out (the work called for the lowering of the existing 30-inch cast-iron submarine pipe under the waters of the Hackensack River), the court held that the specification was legal and valid.[28] But in yet another case where the municipality, because of its unfamiliarity with various types of sewage-disposal systems, advertised for bids without promulgating specifications of any kind but requested each bidder to furnish his own specification, it was held that such specification was illegal. The court ruled that the municipality was required to adopt a common set of specifications based on its best judgment of the system which would best fill its needs and that only then could bids be requested.[29]

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BECAUSE it is universally recognized that this is an age of specialization and that, therefore, purchasing authorities cannot be "masters of all trades," the courts have recognized that it may be desirable for municipalities to seek the aid of technical help in promulgating specifications for various items it may require from persons who might later become bidders. To encourage aid of this type to the end that the community may benefit therefrom, it is held that there is nothing illegal in the agency seeking or the potential bidder giving such technical assistance, provided, of course, such aid is sought and given in good faith and that the specification which results therefrom is not unduly restrictive.[30]

It must have become obvious to the reader before now that a restrictive specification is illegal if it prevents other than free competitive bidding. But it is not every restriction that makes the specification restrictive in the legal sense of the word. It is well recognized that there is no prohibition against a municipality's setting up justifiable restrictions in the drawing of its specifications. There are many and various types of legal restrictions. For example, most states require bidders to post performance, and in some cases payment, bonds. Other examples of legal restriction are those which require bidders who are distributors rather than manufacturers to furnish certificates of their manufacturers' availability of supplies or products being furnished by the distributor; [31] those requiring bidders to furnish samples,[32] those requiring reasonable experience qualifications on the part of bidders; [33] those requiring that bidders have reasonable plant facilities, both for the doing of the work and for keeping maintenance and repair parts available; [34] those setting forth various methods of financing payments of the particular improvement; [35] and those requiring bidders to show previous successful installations.[36]

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A RESTRICTION which conforms to all five of the following rules may generally be considered a justifiable or legal restriction:

1. The restriction must be equally applicable to all bidders whenever possible.[41]

2. The restriction must have for its ultimate purpose the welfare of the citizens involved.[42]

3. The necessity for the particular restriction must have a valid basis in fact rather than constitute a mere administrative conclusion.[43]

4. *A specification or part of a specification is never restrictive if it actually reflects the minimum requirements of the procuring agency for a particular purpose, regardless of how many potential bidders may be shut out as a result of such statement of minimum requirements.*[44]

5. The restriction must be reasonable in the light of the purpose it seeks to accomplish.[45]

The following quotation from leading case puts it thusly:

> Free and full competition . . . does not deny the city's right . . . in reasonable limitation to require bidders to meet proper standards . . . so long as the requirements are in the best interests of its inhabitants, and although the effect is somewhat to eliminate the number of possible bidders . . . the specifications in some respects were quite detailed. . . . If there is a good reason in this instance (and others where the specifications were just as specific and narrow) why such materials should be required rather than others, the provision is not discriminatory, even though it restricted the field to bidders. If, on the other hand, no sound reason exists for such requirement, the provision is discriminatory even though some manufacturers could comply.[46]

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VERY OFTEN we find specifications are written identifying the equipment by name or calling for a particular type of equipment. As a general proposition it must be obvious that a specification so written is illegal and the adding of the words "or equal" does not *per se* cure such illegality. The true rule with regard to the so-called "or equal" rule is that where the description in the specification is merely functional, the adding of the words "or equal" will cure the defect. But if the specification as written is in fact descriptive of the name brand, the mere adding of the words "or equal" will not eliminate the unreasonableness of the restriction.[47]

As a general proposition, where it is required that materials are to be purchased by competitive bidding, it has been held that "the fact that a particular material has been used for forty years and proved satisfactory is no justification for the continued purchase thereof to the exclusion of all others of similar or equal quality, nor is the personal preference or the personal opinion of certain administrative employees sufficient to authorize specifying a particular material to the exclusion of others that would serve the purpose." [48]

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WITHIN THE FRAMEWORK of the principles above set forth and without violating such principles, the purchasing authorities are still vested with much discretion in the drawing of plans and specifications. Indeed, they are charged with the duty of exercising such discretion. They may thus decide to have separate bids for labor and materials on any given job or to have them bid together; [49] they

may decide on the respective merits of various systems in the first instance and then proceed to promulgate a set of plans and specifications based on the system they think best;[50] they may decide how and when, and under what circumstances, the work or material will be paid for.[51] These things and others like them they may legally do provided always that there is a reasonable and factual basis for their decision and provided that all persons or corporations have the ability to furnish the supplies or materials required by the plans and specifications are allowed to compete freely for the privilege of so doing.[52] The courts have consistently held that "In the absence of a clear showing of bad faith, the court will not substitute its judgment on an administrative matter concerning the affairs of municipal government clearly within its province."[53]

A typical illustration of such discretion is in the situation where a legal specification has been promulgated but none of the bids received meets strictly the requirements of the specifications. The low bidder contends, however, that while his bid does not strictly meet the specifications, the article offered by him will more than suffice to meet the actual need. In such situations the rule is that it is for administrative consideration whether the article so offered does meet the actual needs and whether, if it so meets such needs, it should be accepted or whether all bids should be discarded and the specifications revised so as to more clearly state the actual need. Whatever the decision, so long as it is made in good faith, it will not be subject to review.[54]

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Examples.

LET US NOW EXAMINE a few representative cases to see how the courts treat with particular problems.

First we will consider a case in which the court had under consideration a fairly common situation. The city wished to purchase a particular fire engine based on the fire chief's recommendation. The specification was admittedly restrictive in the following details:

1. The functional specifications described a particular fire engine.
2. It required that all equipment to be furnished had to be regularly produced in the factory of the bidder.
3. The successful bidder was required to maintain a service station or depot for the repair of the equipment within 200 miles of the city, and the depot had to be stocked with parts in an amount of not less than $50,000.

The court could have taken any one of several positions. It could have:

1. Held a fire engine to be "standardized apparatus" and, therefore, excepted from competitive bidding and thus confirmed the award.
2. Held the specifications to be unduly restrictive and thrown the award out.

That it did neither was to its credit and showed a complete understanding of the principles hereinabove discussed. So far as the first restriction was concerned, there was testimony in the record by the fire chief, which was uncontradicted, as to the various ways in which the equipment under consideration was superior from his (the fire chief's) point of view, and the court, on the basis of such testimony, held:

> Naturally an experienced fire chief would be desirous of procuring such [better] apparatus and it is reasonable to assume [he] would be better qualified than an inexperienced individual in preparing specifications for such equipment.

Thus, in effect, the court refused to hold the fire engine in this case to be standardized equipment, for to have done so would have required them to accept the other two restrictions as well, and that they refused to do. They rather held that because of the qualifications of the fire chief and because he wrote the specifications—that such first restriction was a *reasonable* one and therefore proper. The other two restrictions, however, were, properly we think, held to be entirely unreasonable and therefore "unduly restricted."[55]

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IN ANOTHER CASE[56] the proof was that the successful (high) bidder's equipment met the specifications calling for a bore in the pump which was to be 5¾ inches wide, whereas the unsuccessful (low) bidder's had a bore 5½ inches. It was contended by the unsuccessful bidder that the difference was so small as to make the purchasing board's determination arbitrary and capricious and that since it (the unsuccessful bidder) was the lower of the two bidders, it should receive the contract. The court, following the greater weight of authority in cases of this type, held that it will not substitute its judgment for that of the purchasing board and that regardless of how small the difference was, if such difference in the honest opinion of the board was substantial, the court would not upset such determination.

It will be remembered that under certain circumstances a municipal purchasing agent may seek and receive technical advice from proposed bidders for the purpose of aiding him to obtain the best material for the least amount of money.[57] For the purpose of emphasizing this rule and because it lays down an excellent set of rules of conduct to be observed by the bidder as well as the city in such cases, the language of the court in such a case may be read with profit, as follows:

> First is the contention that the contract cannot stand because prior to the adoption of the plans and specifications the village officers and representatives of the company colluded and conspired so that the plans and specifications were made advantageous and acceptable to the company to the disadvantage of the other bidders thereby bestowing on [defendant] an unfair and illegal advantage and unfair competition. Other plaintiffs pointed out that agents of the company attended village meetings and discussed the subject of the municipal plant, making various suggestions and proposals during the course of the meeting. It is argued that the most friendly relationship existed between the council and the company and that many of the proposals made by the latter were adopted by the council as the result of collusion and fraud.
>
> The record does not sustain that contention. The meetings at which the representatives of the company appeared were public. Representatives of civic groups attended. The attorney for [plaintiff] was present and on some occasions took active part in the discussion. The company's agents were not the only representatives of business organizations who attended . . . We do not find any evidence upon which a finding that there was a preconceived plan to accept the company's proposals could stand nor do we think the conduct of the company's agents was any different in substance than that of the other representatives. . . . The council should not and need not be deprived of the knowledge and experience of those familiar with matters relating to municipal power plants merely because they represent a possible bidder. What the law demands is that the council preserve its right of independent action. There has been nothing produced by plaintiffs which shows that the council was not free at all times to reject suggestions and proposals made in the meetings by various representatives when it deemed them not to be in the best interests of the community. Likewise, others including citizens of the village and representatives of other contractors could and did contravert the proposals of the company. So long as the council acted freely and independently and for what it properly deemed to be in the best interests of the community the mere fact that it incorporated into the plans and specifications proposals argued for or advanced by possible bidders is not ground to set aside the contract when the plans as adopted do not in fact unreasonably or unlawfully limit competition.[58]

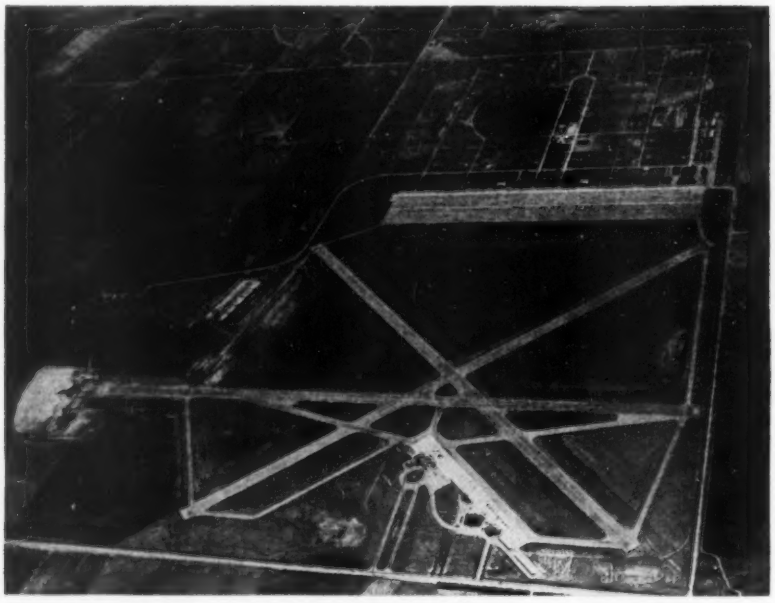
EDITORIAL NOTE: Part II of this article, discussing the "Lowest Responsible Bidder," will appear in the February issue of THE AMERICAN CITY.

The Annual Index

listing by subjects and by cities the articles and items published in *The American City* for the 12 issues for 1952 will be available without charge to subscribers for the magazine. Address requests to 470 Fourth Ave., New York 16, N. Y.

LUBBOCK, TEXAS

Saves Its Airport by Using Soil Cement



Formerly a disabled veteran of World War II, the airport at Lubbock, Texas, is now fully recovered and once more is serving the public.

Runways needed rebuilding after six years' use by the Air Force—soil cement provided added strength a a cost within the municipal budget

R. L. OLDHAM
Director of Public Works
Lubbock, Texas

LUBBOCK is in the airport business today only through the assistance of soil cement. As we see it, if it hadn't been for this type of construction, we never would have been able to afford the reconstruction of our "war-damaged" airport runways.

We started building our airport in 1940, as a WPA project, completed it in 1942, and equipped it with three runways, each 5,000 feet long and 150 feet wide, using flexible-base material selected from a local pit and compacted to an 8-inch depth. We covered the base with a triple asphalt-penetration wearing surface and thought we were set for our airport needs for some time to come.

A few months later, the Air Force leased our new airport for a glider-training field and held it until 1948. If the runways had to handle only glider traffic their condition might have been different, but during that period we also saw B-25's, B-26's, B-17's, C-54's and B-29's landing on our 8-inch flexible-base runways. The Air Force maintenance crews worked hard to keep the runways in good condition, but even so, by 1948 the surface scarcely resembled the condition it was in when we finished our 1942 construction. Actually, much of it had failed completely.

The federal government, through the Civil Aeronautics Administration, expressed its willingness to restore the runways to their 1942 condition. This meant that it was willing to build a new caliche base similar to the old, and apply a new asphalt surface of the same quality that had existed previously. However, since 1942 we had acquired ample evidence that a runway of this type would never carry the loads imposed by modern aeroplanes. Therefore, we decided that if we were going to rebuild, we would have to rebuild more strongly. Since the CAA refused to bear the entire cost of concrete pavement or its equivalent, we soon discovered that we would have to find a cheaper equivalent.

In the High Plains of Texas, we customarily have used two types of pavement: the caliche base with an asphalt surface, and the concrete pavement. The former never has been too satisfactory. It absorbs moisture readily, freezes, heaves, and causes failure of the asphalt surface. Spring rains also have a very bad effect on the surface. Many engineers have tried to solve this problem, but Mother Nature still seems to have the upper hand.

While we used only two types of pavement, we knew about soil cement. We were familiar with the fact that it is a mixture of standard portland cement and the native soil compacted to a high density. We were impressed by its ability to withstand internal stresses caused by freezing and thawing, and also with its strength, greater than the flexible base but not as strong as a concrete slab.

Soil Cement Investigated

This prompted us to investigate some existing runways made of soil cement. One was in El Paso, at the Biggs Air Force base. Here the runways are of native soil, a fine sandy loam, stabilized with portland cement to a depth of 6 inches, and carrying approximately 2 inches of hot-mix asphaltic surface. These runways were built in 1942 and are giving

excellent service today, more than 10 years later.

Thus encouraged, we took the next step and solicited the assistance of the Portland Cement Association, which responded by testing samples of our soil. The tests showed that local soil blended with 7% by volume of cement would care for all but one small section, and here the cement content needed to be increased only to 8%.

Project Set Up

We then prepared plans and specifications covering the stabilization of 69,794 square yards of base with cement to a depth of 8 inches and covering this with four layers of asphalt applied by the inverted penetration method. We also included 51,631 square yards of area stabilized to a 6-inch depth, carrying a triple asphalt-penetration surface. The 8-inch-base reconstruction was on the main north-south runway, used for instrument landings. Bid prices ran as follows:

Work	*Per Square Yard*
Surface removal	8c
8" soil-cement stabilized base ...	86c
6" soil-cement stabilized base ...	73c
Quadruple asphalt surface	60c
Triple asphalt surface	34c

Our total contract price was $235,000. Of this amount, the federal government paid $121,425, representing its estimate of the cost of rebuilding the runways to our old 1942 specifications.

The soil cement went down with remarkable ease. In my opinion, it is the most fool-proof type of construction that an engineer has to deal with. Unless the base freezes immediately after its completion, nothing can possibly go wrong.

The contractor stabilized the base for a distance of 600 feet at a time, leaving turn-around areas of approximately 50 feet between these predetermined sections. Thus the operating equipment never crossed freshly stabilized material. In order to maintain good moisture control, we stabilized only half of the 150-foot width at a time.

The base as it looked before being resurfaced.

The contractor used a P & H stabilizer to do the work. And at the end of each day's run, he would run the stabilizer transversely across both ends of the day's processing, thereby establishing straight and smoothly cut edges for construction joints. After a sufficient number of these gaps remained, the contractor would return and stabilize them in a transverse direction.

The old asphalt surface was removed and wasted in the low areas of the airport site. Then the natural base was graded with a 12-foot self-propelled grader and compacted with a pneumatic roller to uniform density.

How the Base was Built

Cement came to the job in bulk and was unloaded from hopper cars into dump trucks with a screw-type cement conveyor augmented by pneumatic vibrators. It then was delivered to the site and spread in a uniform layer by a belt-type Smith spreader attached directly to the dump truck. The contractor spread the cement at 7 a.m., and followed it immediately with the stabilizer. An inspector then would check the moisture content of the loose material, and corrections could be made if needed. A sheep's-foot roller then operated back and forth behind the machine until it had thoroughly compacted the lower two-thirds of the loose material. A second sheep's-foot roller followed, and continued the compaction until the base reached its desired density.

After compaction, the soil-cement base received a relatively heavy application of water from a tank truck with a pressure distributor. Then a spike-toothed harrow scratched the rough surface to leave a mulch approximately 1 inch deep on top of the compacted base material. A blade smoothed and shaped this mulch; the water tank made a light application of moisture, and a pneumatic roller compacted the 1-inch layer to its proper density, thus producing a uniform compacted base.

We did not apply the asphalt surfacing until the following year. We did, however, apply a light shot of RC-2 asphalt as a curing agent and covered it with fine crushed stone. In this way, we could use the runways during the winter. In the spring, we noted that a uniform cracking pattern had formed and we assumed that uniform shrinkage had taken place. We then applied the asphalt surfacing and it has proved entirely satisfactory.

Carries Heavy Loads

No one seems able to establish the maximum load a soil-cement base will carry. We have observed, however, that the reconstructed runways are handling gross loads of 70,000 pounds daily. Prior to reconstruction, these same runways showed distress at 25,000 pounds. The base was constructed on a good sandy loam foundation. We believe that it will handle safely any loads now anticipated, and we can expect long, maintenance-free life.

A P & H stabilizer blends soil cement at a single pass during construction of the runways at Lubbock's airport.

Louisville's Mayor-Administrator Plan

"City Consultant" under contract can be useful way of promoting municipal efficiency

By CHARLES P. FARNSLEY, *Mayor*
Louisville, Ky.

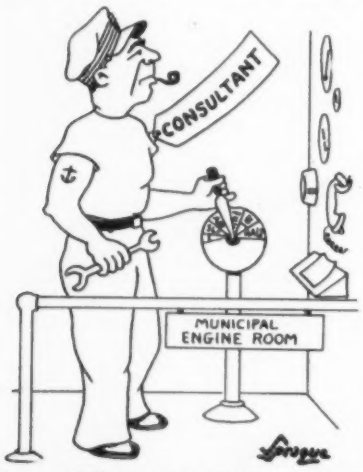
(As told to G. D. McMullen)

"On a big ship—you need a chief engineer."

FOUR YEARS' EXPERIENCE with the unique plan of utilizing a city consultant-administrator have paid the City of Louisville rich dividends and, I believe, have established some basic principles in this new technique in municipal administration.

In November 1948 Roy H. Owsley, a leader in the American Municipal Association and formerly manager of the American Municipal Service, came to Louisville under a two-year contract at $15,000 a year. The contract was renewed in 1950 for another two years. Mr. Owsley was then urged to accept a one-year contract to carry him through the remainder of my term in office, but he felt that his professional career would be enhanced by a period of experience as a city manager. For that reason he has accepted such a post in Portland, Me.

This was my thought when I recruited Roy Owsley: An expert in municipal administration, working as a full-time independent consultant and professional administrator, could perform two valuable services: (1) He could free me as mayor from routine duties to enable me to devote almost full time to forming basic policies, keeping in close touch with the citizenry, performing my duties as a figure in the local Democratic Party and attending to the ceremonials that go with the office, and (2) he could bring a much higher degree of efficiency to city administration.



". . . a full-time independent consultant and professional administrator . . . could bring a much higher degree of efficiency to city administration. . . ."

What Louisville Has Learned

Our anticipations have been more than justified. Feeling that our experience may be of interest to other municipalities, I am attempting to crystallize the things we have learned in the last four years.

Exactly what is a city consultant? His duties might vary within very wide limits, but the core of the plan is that he must operate as an independent advisor and administrator on a contract basis. Our experience strengthens our original thesis that a technician hired as a regular employee cannot do as good a job as the career man with a contract. The contract gives the consultant independence of action, the freedom to work out administrative problems on a scientific basis. It is my belief that the consultant's contract probably should run for the length of the mayor's term, unless legal or fiscal considerations prohibit.

Single-assignment consultants have been a frequent practice with cities, but my observation in Louisville was that their recommendations largely went for naught because the consultant did not stay around to supervise their execution.

Conditions Under Which Plan Can Work

Our experience has convinced me that the mayor-administrator arrangement has very important advantages for certain cities under certain conditions. At the risk of oversimplification, I would summarize our experience to say that a consultant system can be profitable for a city under four conditions.

● First, the city must be a large one, with the strong mayor-council type of government. How large? Large enough so that the mayor cannot find the time to serve as an on-the-spot administrator in the routine day-to-day operations that make up the backbone of municipal service. Large enough so that its problems demand the full-time attention of a trained administrator.

● A second requisite is that both the mayor and the council be "sold" on the scientific approach to municipal administration and be willing to stick to their guns. Innovations in procedure, the inevitable conflicts with political interests, and the day-to-day decisions of an administrator are certain to bring pressures on elected city officials. Unless officials back up their consultant on matters within his sphere, the system is doomed to mediocrity and frustration.

The Key Requirement

● The third, and perhaps key, requisite is a clear understanding between the mayor, the consultant, and the city council as to the duties and authority of the consultant.

Mr. Owsley's status was defined clearly in the beginning. Generally, the administrative duties of the mayor's office were delegated to him, part and parcel, except for matters that touched on broad policy. I reserved the right to veto any of his administrative decisions. But to protect his professional standing, he reserved the right to make public any of his vetoed decisions and to explain to the press his reasons. Happily, such a necessity has never arisen.

On policy matters Mr. Owsley has been a constant and valued advisor, but his counsel has been wholly private. Where he has differed with me, he has been silent publicly.

Specifically, our consultant was delegated these duties: Performing the mayor's tasks in preparation of the city's executive-type budget; personnel planning and administration,

except where civil service governs; routine coordination of the work of the city departments; liaison between the mayor and the Board of Aldermen; advising the mayor and department heads on technical matters, and conducting special investigations for the mayor.

● This brings up the final requisite for the consultant arrangement: A good working relationship between the mayor and his consultant. To some extent this is covered by factors I already have cited, but the relationship goes deeper. A close friendly relationship is highly desirable, and a relationship embodying at least a high degree of mutual professional esteem is an absolute necessity. If the mayor must personally check every detail of the consultant's program, the benefits of the system are greatly diminished. If the consultant cannot fully respect the broad policy framework within which he works, the system likewise can accomplish little.

There are definite pitfalls to be guarded against. The mayor alone must always be identified in the public mind as the people's representative and the policy spokesman for the administration. The mayor must not allow his department heads to make a "workhorse" and "fall guy" of the consultant, dumping their routine operations into hands that could easily become overburdened.

The mayor faces a problem too in public acceptance of a consultant. In Louisville the general public, soon convinced that the consultant was a genuine administrative technician, wholeheartedly accepted the arrangement, despite occasional remarks about a consultant who earned more than the mayor.

Our acceptance problem has been with special-interest groups. Some have worked with Mr. Owsley without objection until his technical recommendation went against them. Occasionally they have then complained that the "mayor ought to handle this problem himself." Such instances, however, have been exceptional and have been no real problem to the administration.

The specific accomplishments wrought by the consultant system in Louisville are a story in themselves. Briefly, the arrangement has saved the city many thousands of dollars annually through administrative practices and tax and financial policies. These range all the way from scientific budget-making to persuading the school board to share a part of the cost of tax collection. Our administrative efficiency has increased, and every department is doing a better job.

The City of Louisville wants to continue the consultant system. My short remaining period of office (a mayor cannot be re-elected here) lessens our chance to find an acceptable replacement for Mr. Owsley during my term. If we do not, we plan to utilize the occasional services of consultants in special fields.

What Water-Works Financing Looks Like Today

By W. G. RIDDLE

Charles A. Haskins Consulting Engineers
Kansas City, Mo.

A QUICK LOOK at water-works operations here in the Midwest reveals some interesting trends in operating expenses. For instance, in Kansas City, Kans., the 1942 operating expenses amounted to 7 cents per 1,000 gallons sold; in 1951, they had increased to 11.5 cents, or a rise of 77%. In Salina, Kans., similar figures amounted to 3.9 cents in 1942 and 9.2 cents in 1951, for a boost of 135%. In Pittsburgh, Kans., the 1942 figure was 11.8 cents, and its 1951 corresponding figures was 23.8 cents, an increase of slightly more than 11%.

Construction costs have sailed upward by an even greater amount. If, for example, we assume that a city constructed water-works improvements in 1935 at a cost of $200,000, and financed the project with 20-year, 4% revenue bonds, the average annual-debt service, exclusive of reserves, would have amounted to approximately $14,720. If we accept the *Engineering News-Record* index of construction costs, the same work in 1952 would involve a cost more like $600,000 which, at 3% interest for 20 years, would require equal annual payments of approximately $40,320. Thus it requires approximately 2¾ times as much revenue for debt-service purposes to pay off indebtedness incurred in 1952 as would have been required for the same improvement to provide identical service constructed in the mid 1930's.

Larger Lots Raise Costs

There is another trend that is having its effect on water-works costs. In older residential areas, lots with 25- to 50-foot fronts were not uncommon. In modern residential developments, however, lots with 60- to 100-foot frontage appear to be the rule. Therefore, a distribution system will serve only one-half to one-quarter of the customers that the same area would have served 30 years ago. Thus the revenue has to be higher if the new service area is to pay its own way.

Still another trend toward the greater use of water is air conditioning. One of the problems already plaguing our metropolitan systems is air-conditioning equipment of the nonconservation type. Since they require approximately 20 times as much water as those equipped with water-conserving apparatus the effect on the water system is obvious. Moreover, it is a poor load, producing a peak when other demands for water are high.

These indications make it imperative that a water department take advantage of every opportunity to make sure that utility rate schedules are adequate and equitable, and that unfair conditions, such as nonconserving air conditioners, are not allowed to exist.

Recommendations

The utility should strive to modernize accounting methods so that it will know whether or not water service is being furnished equitably. And it should endeavor to obtain administration policies which provide for a payment of an adequate, but not excessive, amount annually into the city's general fund in lieu of taxes. Diversion of water revenues beyond this amount should be avoided, if at all possible.

Cost of Living Pension Plan for Miami Beach, Fla.

A UNIQUE retirement plan for city employees which relates pensions to the cost of living was recently adopted in Miami Beach, Fla., the Municipal Finance Officers Association reports.

The plan provides that all retirement allowances and pensions paid after January 1, 1952, shall have added to them a cost-of-living adjustment. The amount of the adjustment will depend upon a percentage increase equal to ½% for each point by which the U. S. Bureau of Labor Statistics Consumers' Price Index for Moderate-Income Families, exceeds 145.

The percentage of adjustment will be established by the pension board at the beginning of each year, based on the average figures for the 12 months preceding January 1. The established rate will be payable through the ensuing year.

The plan specifies, however, that the percentage increase is not to exceed 30, and will not be applied to any retirement allowance or pension beyond $200 a month.

The cost-of-living adjustment in the pension allowance is paid entirely by the city.

Miami Beach also provides a uniform $35 per month cost-of-living bonus for all its employees.

Urban Progress in Latin America

By ANATOLE A. SOLOW, *Chief, Division of Housing & City Planning, Pan American Union, Washington, D. C.*

The Inter-American Housing Center—a major example of international cooperative effort

FOR THE FIRST TIME in the Western Hemisphere housing has been established as a specialized field of graduate study. Twenty professionals from 15 countries are taking the one-year course given by the Inter-American Housing Center in Bogota, Colombia.

This, however, is only one of the facilities offered by the Housing Center, which also conducts research in technological, economic, and social aspects of housing, and which provides a scientific exchange and consulting service to the countries of Latin America.

The establishment of the Inter-American Housing Center is a significant milestone in the cooperation between the American republics in the field of housing and urban development, which has been expanding at an ever-increasing pace since 1939 when the first and only Pan American Congress of Low-Cost Housing was held in Buenos Aires, Argentina.

Shrinking distances and improved means of communication have made it possible to establish closer contacts between nations, to exchange technical information, and to share the scientific knowledge developed in each of the countries. The first continental step toward housing cooperation on a continuing basis was taken in 1945 by the Pan American Union, which set up an office to act as a clearing house for the 21 member governments of the Organization of American States, in housing and city planning matters. In response to an increasing demand for services in this field the technical staff was expanded and the office was established as the Division of Housing and Planning of the Pan American Union.

Based on this experience and following the wishes of the governments, the Inter-American Economic and Social Council, one of the organs of the Organization of American States, gave top priority to the establishment of the Inter-American Housing Center (Project 22), when it initiated its Program of Technical Cooperation in 1950.*

In setting up an institution that would offer specialization in housing to professionals at the graduate level, few precedents could be found anywhere. Some universities offer housing courses at undergraduate or graduate levels, but only as part of their curriculum in other fields—such as in city planning. Moreover, experience with the problem in Latin American countries indicated the need not only for training professionals but also for conducting research in the varied aspects of housing, and for making available to housing agencies, universities, and research institutions throughout Latin America the vast amount of technical literature which already exists but which does not receive adequate distribution and circulation.

*See THE AMERICAN CITY, February 1951.

Progessor Vega-Christie of Peru (seated behind the table) reviews a project with trainees in the drafting room of the Inter-American Housing Center.

Location of the Center

The location of the Center presented a difficult problem. Five countries were desirous of having the Center in their territory and offered local facilities for its establishment, such as space, student-living accommodations, local personnel, and transportation, etc. After careful surveys which took into account not only the local facilities but such other factors as geographic accessibility, variety of climatic conditions approximating all regions of Latin America, and background experience with housing programs, Colombia was selected as possessing a combination of the most suitable conditions.

The Housing Center is installed in an annex of the School of Enginering on the beautiful campus of the National University in Bogota. Ground will be broken this year for a new building on the campus designed especially for the needs of the Inter-American Housing Center and financed by the Colombian government. Although the climate of Bogota (altitude 8,000 feet) is cool, there are in Colombia regions within easy access from the capital that represent all types of climate to be found in Latin America, from the humid tropics on the Pacific and Atlantic to the altiplains of the Andean mountains; so that field experiments can be carried out under the most varied conditions. While the Center functions as an inter-American cooperative undertaking under the direction of the Division of Housing and Planning of the Pan American Union, two Colombian agencies are directly cooperating and sharing the local expenses. These are the University of Colombia and the Instituto de Credito Territorial, which is Colombia's national low-cost housing agency. In addition to its material support, this Institute offers its experi-

ence in the housing field* and the use of its projects in various parts of the country for experimental and investigative research.

The budget allocated by the Organization of American States' Technical Cooperation Program to this project amounted to $154,800 for 1952. It includes salaries of the full-time teaching and research staff, consultant lecturers, specialized equipment, travel, and publications, as well as funds for 21 trainee fellowships—one per country per year—including transportation from home country to the Center, subsistence allowance, and tuition.

The budget also allows for a certain number of research grants to institutions throughout the Western Hemisphere for the preparation of worthwhile research reports which can be published by the Center and thus contribute to the common fund of knowledge. Such a grant has already been given to the Social Programs Administration of Puerto Rico for the preparation of a practical guide on aided self-help housing.

Cooperative Enterprise

One of the most significant aspects of this project is its cooperative character. It is financed jointly by all the American republics. Eighteen governments have already stated their desire to participate actively in this project. Fifteen have sent trainees during the first year. The teaching and research staff has been recruited on an international basis. Among them they know every one of the American countries at first hand.

The director of the Center is Leonard J. Currie, who formerly taught design at Harvard University and who was a member of The Architects Collaborative, associated with world-famous architect Walter Gropius. Mr. Currie has worked for several years in Guatemala and Nicaragua and recently completed a housing study for the Costa Rican government under the Point Four program. Guillermo de Roux, Panama's leading architect and a graduate of Yale University, is teaching project planning and design at the Center, while Peru's David Vega-Christie, with a distinguished career in housing work, is responsible for the social and economic facets of housing. The Scientific Exchange Service is headed by Miss Sabor, of Argentina, one of Latin America's top-notch scientific reference librarians.

The Curriculum

The curriculum is designed to give specialization in housing to professionals of different disciplines, so that upon return to their country they will be able to take leading administrative and technical positions in housing agencies. The intensive one-year graduate course emphasizes the interrelationships of architecture, engineering, and the economic and social aspects of the housing problem. Since the usual approach to housing is only too often "compartmentalized," every effort is made to focus on the interrelationship of all component elements that must be considered jointly to arrive at any sound solutions.

Emphasis is placed on teaching methodology rather than on imparting knowledge alone. The first month is devoted to a basic course consisting of a series of seminars and lectures outlining broadly all facets of housing. After that, group projects are initiated taking realistic conditions as examples. This is done in cooperation with local housing and planning agencies. Projects have consisted of such things as an analysis of a slum area proposed for redevelopment by the municipality of Bogota, evaluation of an existing low-cost housing project to seek improvements, design of a neighborhood unit on a site owned by a private nonprofit organization, erection of a bamboo house in a region which is rich in this native material. During the period of laboratory and project work comprehensive courses are given in such subjects as housing surveys, land economics, community facilities, construction and building materials, management, legislation, etc.

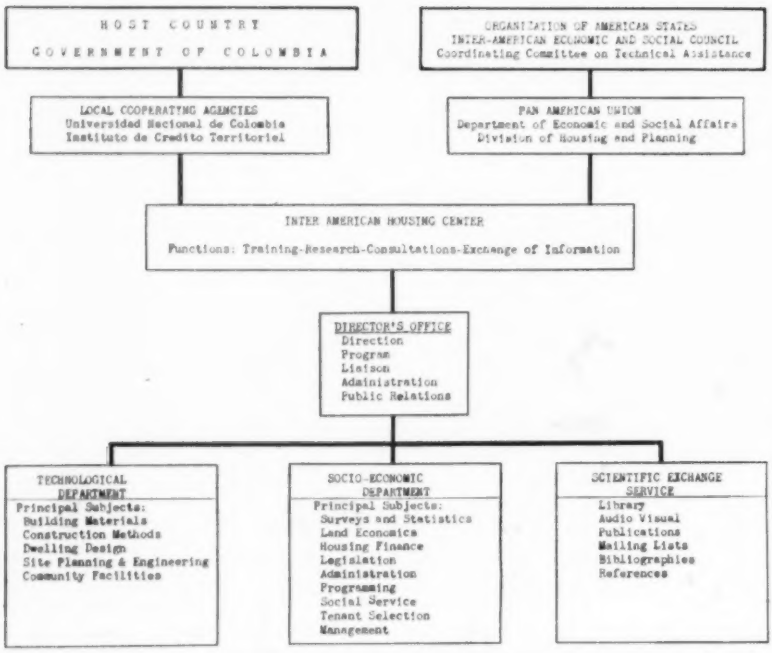
The last period of the course is given over to individual research projects in fields of special interest to the countries from which the trainees come, and also to in-service training in various agencies and offices in Bogota. Throughout the course special classes are given in research methods, the use of the library, and the use of technical reference materials.

The program of the Center reflects the growing recognition that research offers great protentialities for

Howard Fisher (kneeling) consultant to the Inter-American Housing Center, discusses various types of building blocks with trainees.

At right is the entrance to the temporary headquarters of the Inter-American Housing center, an annex of the School of Engineering of the National University at Bogota, Colombia. Ground is to be broken on campus this year for a new building,designed especially for the Center's needs.

* See THE AMERICAN CITY, December 1950.



Organization chart of the Inter-American Housing Center at Bogota, Colombia.

reducing housing costs. The question, however, arises as to what type of research will produce the most useful tangible results within a relatively limited budget. Experience in Latin America indicates that as a first step efforts should be focussed on applied research to improve existing methods of design and construction, leaving basic research for a later stage in the development of the Center.

Pilot Laboratory and Test Project Instituted

The Center was fortunate to obtain, through the United Nations, the assistance of Howard Fisher, well-known and outstanding expert in the field of technological housing research. Mr. Fisher flew to Bogota for four months and, together with the staff and trainees, developed a pilot laboratory and test project as a guide to a long-range program of training, demonstration, and research. As an example, Mr. Fisher used Quiroga, a recent low-cost housing project built in Bogota by the Instituto de Credito Territorial. By using three-dimensional full-scale elements, Mr. Fisher developed a method of simple but effective means to analyze down-to-earth problems of construction and assembly of building elements in their realistic application and to seek improvements which can, when repeated in projects of hundreds of houses, reduce construction costs substantially and increase quality and speed in building. This is only a beginning, but it appears that this developmental and applied research technique is so well suited to the requirements of Latin America, that its application may have a profound influence on training techniques and low-cost housing production in the hemisphere.

Research is only the first step. The application of scientific progress depends on how widely the results of research and existing knowledge are distributed amongst those who are engaged in housing work. At present only a fraction of the technological literature, produced at an ever-increasing rate in some countries, reach those in other countries who need and can apply this information. Very little of this is published in Spanish or Portuguese.

The Center attaches particular importance to this phase of its work and has grouped in a single department all aspects of documentation, library service, publications, scientific-exchange services, and audio-visual materials. A good specialized library on housing has already been established to provide a reference service for the staff, trainees, and visiting specialists. A publications program is being prepared for next year to consist of bibliographies, technical studies, monographs, directories, reprints, and translations. An extensive system of distribution and inter-agency contacts is planned. Audio-visual educational material consisting of color slides, film strips, and educational movies is envisaged.

A field representative of the Center, stationed at present in Costa Rica, gives direct service to the group of small countries in Central America and the Caribbean. During the course of the year he has helped the Housing Department in Costa Rica evaluate sites for housing projects, lay out a neighborhood unit, and build some experimental low-cost houses. In Cuba and in Honduras he consulted with government agencies on new housing programs. In El Salvador he discussed legislation for middle-income housing. In this manner countries can benefit more directly from the experience of the Center, and the radius of activities is gradually being broadened with a view toward establishing regional stations where needed.

An Experiment with Few Precedents

The impact which the Inter-American Housing Center can have on housing progress cannot readily be evaluated at this stage. It is, as the Secretary General of the Organization of American States stated at the inauguration of the Center in May of this year, ". . . an experiment with very few precedents in the history of inter-American cooperation." It is a young institution which has barely seen the light of day and which will, it is hoped, grow and expand with time and proper support to find its true place in the inter-American housing movement. The Center does not seek immediate solutions. Basic long-range objectives, such as education and research which the Center pursues, can bear fruit only after a certain period of time, and several years will be needed to evaluate the results of this work.

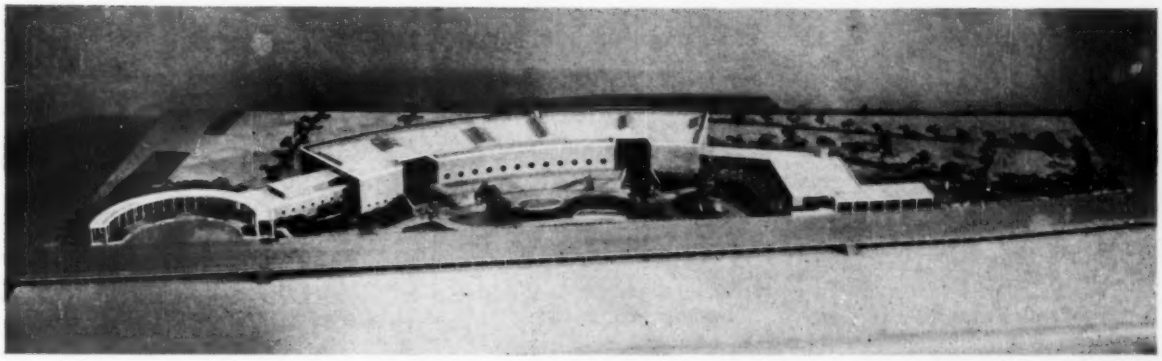
Although the progress to date is encouraging, only a beginning has been made and much remains to be done to substitute safe and sanitary dwellings for the hundreds of thousands of rural and urban slums which, according to an architect, are "held together simply by gravity mixed with faith." The Center's objective, however, is not only housing improvement. Harmonious cooperation among professionals of many countries is tangible proof that the best way to progress and peace is through a cooperative approach of many nations to tackle housing, which is one of the outstanding problems of our generation.

Oh My, Oh Me—It's '53

Bet your councilmen, their aides,
Their wives and offspring, cooks and maids;
Bet your policemen, firemen, teachers
Civic exhorters and gospel preachers;
Bet your stenogs; storekeepers, clerks,
And others in public or private works—
Bet, Mr. Mayor, this fact is true
Of all of them, and even you:
You're still dating letters '52.

—A. S. FLAUMENHAFT

New York's Proposed New Aquarium

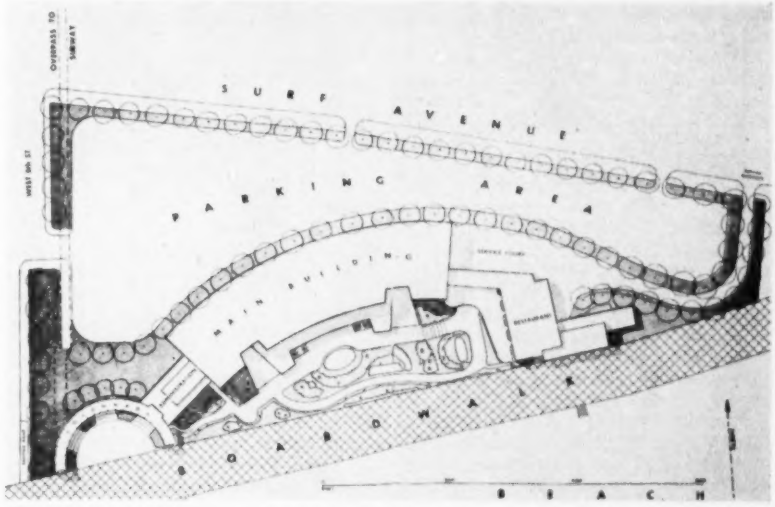


Model of the Aquarium, the cost of which is to be shared equally by the New York Zoological Society and the City of New York.

NEW YORK CITY'S new mammoth Aquarium, designed by Harrison, Fouilhoux and Abramovitz, and Aymer Embury II, will be 1,165 feet long, contain 450 exhibition tanks, and have six major exhibition halls.

The Aquarium will require 1,250,000 gallons of water in its exhibition tanks and storage reservoirs, all to be pumped from tank to reservoir and back to tank by 56 primary water systems. The basement will house the filters, aerators, temperature controls, pumps, and other apparatus necessary to circulate 12,500,000 gallons of water per day.*

Total construction cost is estimated at $8,000,000. For its portion of the cost, the New York Zoological Society is campaigning for funds.



The development plan of the Aquarium site will be a major step in the gradual rehabilitation of the Coney Island area which for many years has been rapidly deteriorating. New park and playground areas, boardwalk extension, parking fields, and public and private housing projects, proposed and under construction, will reverse the downward trend and make the community stable and intelligently planned.

* A booklet describing the building, site, transportation facilities and renovation plans for the Coney Island area has been issued jointly by the New York Zoological Society, headed by Fairfield Osborn, President, and the government of New York City, represented by Robert Moses, Commissioner of the Department of Parks (Arsenal, Central Park, New York, N. Y.)

The Clouds to Earth Exhibit—a working diorama, 40 feet long, in which clouds form, precipitating their moisture as rain, and water flows through brook, creek, and river back to the sea. The diorama provides the theme carried out in the rest of the Aquarium—the cycle of water and that of creatures that live in the water.

JOHNSON, KANS.

Dual-Fuel Engine Drops Electric Costs

Community of 900 finds a way to dodge rising electric-power costs

THE SMALL MUNICIPALITY with a population under 1,000 has some special problems in operating a municipal electric plant and providing residents with dependable service at reasonable cost. Production volume is necessarily low and yet such major-operating costs as labor are just as high as in a plant two or three times as large. The City of Johnson, in southwestern Kansas, is proving that a small community can achieve economical and profitable power production through use of a modern, efficient, heavy-duty dual-fuel engine.

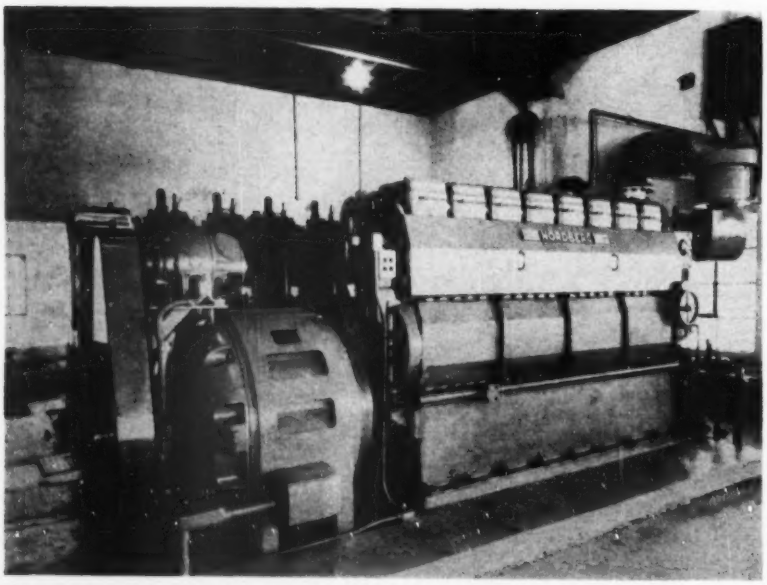
Heavy Residental Load

Johnson has a population of 900 and about 90% of the electric load is residential. The only industrial load is provided by five grain elevators (one with a capacity of 500,000 bushels) which have a combined demand of about 180 hp. This is not an unmixed blessing, since 50-hp motors come on and off without warning, necessitating reserve capacity in the prime movers carrying the load.

In building its first municipal power plant in 1938, Johnson started modestly with two International gas engines, each rated at 100 hp at 1,200 rpm. Each engine drove a 60-kw generator. These units carried the entire load until 1946, when a 150-hp, 300-rpm Fairbanks-Morse Model 32E-14 diesel was installed. This was an oil-burning engine. In 1948, the city replaced the original 100-hp units with two Waukesha magneto-ignition gas engines rated at 160 hp at 1,200 rpm. In the same year, a 35-year-old Busch-Sulzer diesel was put in for standby insurance.

With these prime movers, Johnson produced power for an average fuel-lube cost of about 9 mills per kwhr. But inflationary pressure, particularly in the post-war years, pushed total operating costs up to an alarming rate. The city held consumer rates steady and the small profits turned into larger and larger deficits. In 1950, Superintendent of Utilities Roy Collings, Mayor Ray Darst, and the City Council decided that the best solution to the problem was to make an investment in operating economy.

Pursuant to this decision, the city installed in June 1950 a new heavy-duty Nordberg Duafuel engine. This four-cycle, turbocharged engine has eight cylinders of 9-inch bore and 11½-inch stroke and develops 530 hp at 600 rpm. It drives a 350-kw generator with a belted 7.5-kw exciter mounted on the generator frame. The new engine burns natural gas with a small quantity of pilot oil for ignition of the gas in the efficient diesel cycle.



Here is the 530-hp Nordberg Duafuel engine that carries most of the electric load at the Johnson, Kans., plant. With it is the General Electric generator, the Woodward governor, the Air Maze filter, and the Puralator lube filter.

Operating Schedule Increased

The new Nordberg immediately took over the largest portion of the load. In its first 12 months of operation, the engine ran 5,996 hours and produced 656,200 kwhrs. This meant operating 68% of the time and generating 70% of the plant's total for the year. Today, the operating schedule is even heavier and the Duafuel unit runs an average of 19 hours a day through the winter and a full 24 hours in summer.

The new engine runs much of the time at light and inefficient load levels. Average load for the entire period is only about 30% of capacity. Mr. Collings has found, however, that the city saves money by running its biggest engine even at a poor load factor. For the first 12 months, the engine consumed 10,162 mcf (thousand cubic feet) of natural gas at a cost of $0.20 per mcf and 14,875 gallons of fuel oil at a cost of $0.105 per gallon.

Savings Immediate

The effects of Duafuel economy and the increasing load were apparent in the financial picture for the first eight months of 1951. Department receipts were $32,269.71, while operating expenses totaled $20,641.34, leaving an operating profit of $11,628.37. During this period the city made interest and principal payments on outstanding bonds in the amount of $5,427.67, leaving a net profit for the eight months of $6,200.70.

To insure continued efficient operation, Johnson officials provided full modern accessory equipment to serve the Duafuel engine. A separate cooling system for the Nordberg engine includes two Worthington motor-driven centrifugal pumps. One circulates soft water through the engine jackets and a Ross shell-and-tube heat exchanger. The other pumps puts raw water through the exchanger and the Ross oil cooler and a new Marley induced-draft cooling tower. Jacket makeup water is treated in a zeolite softener and also with a rust inhibitor.

Texaco Ursa X 30 detergent-type lubricating oil is circulated under

pressure to cylinders and bearings by a built-in engine-driven pump. Some lubricating oil is bypassed continuously from this pressure system through a U. S. Hoffman cartridge-type filter with four Puralator cellulose filtration elements. The lube-oil system also includes an oil cooler and before-and-after strainers.

Mr. Collings reports that lubrication of the engine has been excellent and lubricating oil consumption extremely low. Inspection plates are taken off once a week and the engine always is perfectly clean. One piston was pulled after 4,000 hours, and was found to be in perfect condition. It was replaced without any servicing of any kind. Filter elements are changed every 4,000 hours.

Fuel oil is brought in by truck and stored in a 12,000-gallon tank from which it flows by gravity to the engine's 300-gallon underground day tank. An engine-driven pump picks up oil from the day tank and delivers it through a duplex filter to the injection system. Natural gas comes to the plant at 50 psi, and passes through a Pittsburgh Equitable gas regulator which reduces pressure to 15 psi. The engine is equipped with a safety device which cuts off the gas if pilot-oil or lubricating-oil pressure fails. If gas pressure drops, the engine automatically switches over to full oil operation.

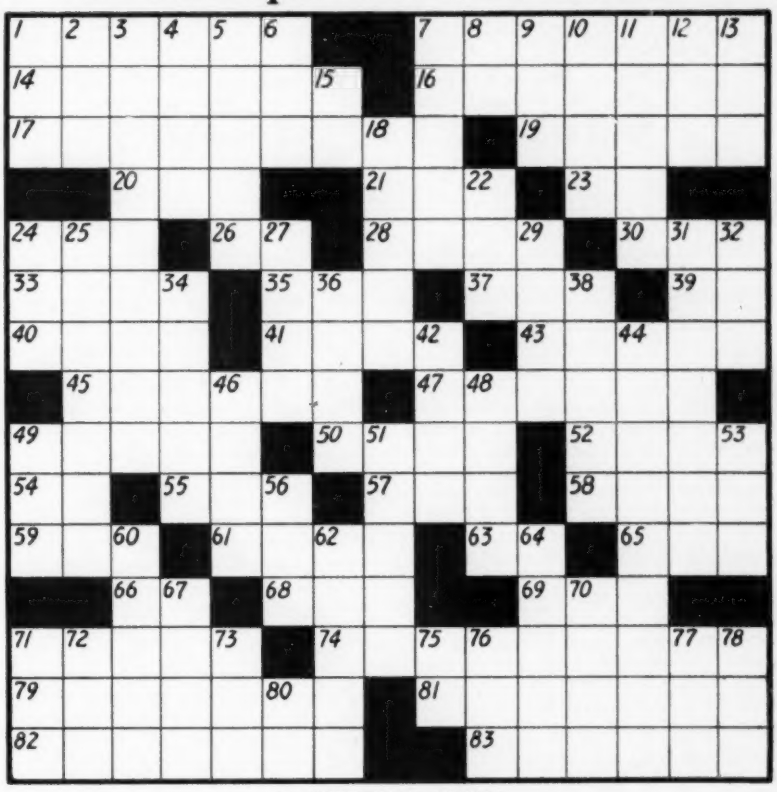
Engine air is drawn through an Air Maze oil-bath filter mounted on the engine and is supplied to the cylinders by the exhaust-driven turbocharger. The exhaust gases pass through the turbocharger and vent through a vertical Burgess Manning silencer outside the plant. There is a gauge board conveniently mounted on the engine with pressure and temperature gauges and an exhaust pyrometer. A Viking alarm system provides visible and audible warnings for jacket water and lube pressure and temperature.

The important transition from deficits to profits was accomplished without any change in the rate structure. As the load grows, with resultant improvement in engine efficiency, unit costs will drop and the increased profits undoubtedly will permit rate reductions.

Harvard Scholarship Available

A $1,000 NATIONAL scholarship for graduate study in landscape architecture at Harvard University has been announced for the academic year 1953-54. The curriculum embraces the design of areas of land for human use and enjoyment—broad-scale physical planning, civic design, housing, parks, and parkways. All inquiries should be addressed, before February 1, 1953, to The Chairman, Department of Landscape Architecture, Robinson Hall, Harvard University, Cambridge 38, Mass.

A Municipal Crossword Puzzle



By EVELYN E. SMITH

ACROSS

1. Hynes is its mayor.
7. Overton is head here.
14. Condition of some streets.
16. Manufactured by Texas Company.
17. A form of municipal transport.
19. Essential to Park Department.
20. Hotel.
21. Brazil's chief city.
23. Telegraphic transfer; abbr.
24. Possess property.
26. Silence.
28. —— box.
30. New York's mayor; abbr.
33. Reservoir.
35. Taught in schools.
37. Valuable to police department; colloq.
39. Account of; abbr.
40. Girl's name.
41. Stop, ——, listen!
43. Municipalities.
45. Smoothes a street.
47. Name and location of foundry company.
49. Hero.
50. Municipal eyesore.
52. English town famous for school.
54. Most prevalent type of electric current.
55. Girl; colloq.
57. Silkworm.
58. Remove; printing.
59. Affirmative vote.
61. Black; French.
63. 45-rpm record.
65. Color of "stop" light.
66. Lead; chem.
68. Former name of world organization.
69. Depart; slang.
71. False name.
74. Illegal to turn in a false one.
79. Handled by Department of Sanitation.
81. Michigan city.
82. Manufactured by Wilshire.
83. Found in municipal market.

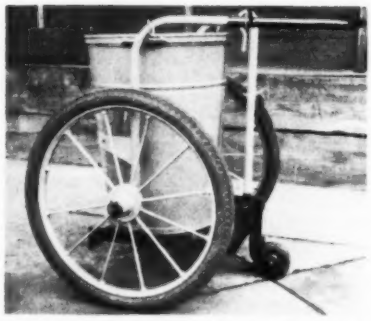
DOWN

1. Operates under a city franchise.
2. Toronto is its capital; abbr.
3. Street washer.
4. Removed; Scot.
5. Bakery essentials.
6. Profit.
7. Black ——; police wagon.
8. Electrical quantity unit.
9. Army policemen.
10. CGS unit of illumination.
11. Port au Prince is its capital city.
12. Sick.
13. Found in all cities; pl. abbr.
15. Site of nation's capital.
18. Sewer-pipe manufacturer.
22. Used to lubricate pumps.
24. Sound of approval in Mexico City.
25. ——— and Tiernan Fluoridator.
27. City ——.
29. Curfew time.
31. Sewer entrance.
32. Directed by the Postmaster General; pl. abbr.
34. Found in housing developments.
36. Foreman of a construction gang.
38. Filleted.
42. Knot in tree trunk.
44. Aqueduct.
46. Where many of New York's policemen hail from.
48. Man's first name.
49. When street lighting is unnecessary.
51. Manufacturer of the Airmaster Compressor.
53. Man's nickname.
56. French coin.
60. Device adding height to a structure.
62. Hint.
64. Where electricity is manufactured.
67. Candidate for birth certificate.
70. Edmonton is its capital; abbr.
71. Attorney generals; abbr.
72. Upheld by the chief of police.
73. Lifeblood of trees.
75. Reprinting; abbr.
76. Dawn.
77. Root; abbr.
78. Masters of ceremonies.
80. Manufacturer of street lighting equipment; abbr.

(The solution to this puzzle appears on page 155)

No-Parking Ordinances for Street Sanitation Gain in Large Cities

Cleveland, Detroit, and New York test the use of temporary no-parking ban allowing mechanical sweepers to operate



Popular with sanitation men in Chicago, these street carts have pneumatic tires and removable containers.

IN AMERICA'S large cities, mechanical street sweeping can work successfully if the cities prohibit parking during the periods when the streets are to be swept. This policy of short-time parking restrictions is working successfully in Cleveland, and Detroit, and is under trial in New York City. This conclusion can be drawn from a study made by the Philadelphia Bureau of Municipal Research for that city's Commissioner of Streets, Paul MacMurray. The study covered street-cleaning practices in cities with populations over 800,000.

Mechanical Sweepers Lose in Baltimore

Hand cleaning methods still play a dominant role in many of the larger cities' street-sanitation programs. Baltimore, Md., with a population of 950,000 and with approximately 1,000 miles of streets, has discontinued mechanical sweeping operations in 1950 because of parking problems. Nevertheless, it operates 10 mechanical power flushers.

These all-aluminum waste receptacles are liked in Los Angeles. They can be emptied easily by raising the panel shown facing the curb.

Baltimore uses 177 men, working alone, who sweep and clean streets in assigned sections of the city; it also uses 337 men working in crews that sweep and clean larger assigned sections. This gives a total of 514 hand sweepers, approximately 0.6 per 1,000 population, or 50 per 100 miles of paved streets.

Baltimore has no special "no-parking" ordinances to facilitate street cleaning. However, where possible, street-cleaning schedules are coordinated with periods where parking is prohibited for traffic reasons. This city prohibits parking at all times on 22 miles of streets, and during the rush hours on 68 miles.

Boston, with a population of 800,000, and with 725 miles of paved roadways, uses 20 mechanical sweepers to augment hand gangs. In addition, it uses six flushers throughout the city.

Boston has 100 men working alone with hand pushcarts and 355 men working in gangs. The men working by themselves are assigned to streets that need cleaning daily. The gangs care for streets that are cleaned weekly. The total number of hand laborers is 455, roughly 0.6 per 1,000 population, or 64 per 100 miles of streets.

Parking Not Restricted

Boston has no restrictive parking ordinances to assist street cleaning, although it has made preliminary efforts to get such restrictions. A new statute permitting all-night parking of vehicles in front of owners' homes has reportedly aggravated street-cleaning problems. The city has 68 miles of streets where parking is prohibited at all times and 47 miles where parking is prohibited during rush hours only. The city plans to prohibit all-night parking during the winter months for snow-removal purposes. The work is directed by George C. Hyland, Commissioner of Public Works.

Chicago, with a population of 3,600,000 and 3,400 miles of paved streets, including boulevards maintained by the Park District, uses 38 mechanical street sweepers assigned to "no-parking" streets in the central business area, and 22 mechanical sweepers assigned to 12 routes throughout the city. Chicago's street-sanitation program is directed by L. M. Johnson, Commissioner of Streets and Electricity.

Chicago Employs Crews

Chicago maintains 275 men working alone with broom and cart; 85 men who work in groups and load the debris from the mechanical sweepers into trucks; and 150 men working alone who sweep curbs and pick up scattered paper on the Park District boulevards. This gives a total of 510 men, or roughly 0.14 per 1,000 population, or 15 men per 100 miles of paved streets.

The city cleans most of the mass-transportation and through streets under a night-route, mechanical-sweeper program. The city has 900 curb-miles of such streets. Present regulation prohibits overnight parking on these streets between 4 a.m. and 7 a.m.; the city assigns 13 mechanical sweepers to patrol these streets during these hours.

In addition, three sweepers do approximately 70 curb miles of other mass-transportation streets regulated by "switch parking." This means that parking is prohibited in the morning between 7 a.m. and 9 a.m. on one side of the street, coordinated with traffic flow, and during the evening hours from 4 p.m. to 6 p.m. on the return side of the street. Sweepers can accomplish excellent results by taking advantage of these "no-parking" periods, the city finds.

Sweeper Assignments

Sweepers used on night-route-cleaning and switch-parking routes are principally the Model 40 Austin-Western, which has a hopper capacity of approximately 1½ cubic

yards, and two recently acquired Mobilsweepers, Model MS, with an extremely large hopper capacity.

When sweepers can operate during the rest of the year, the city assigns 22 mechanical sweepers to ward districts, which includes cleaning neighborhood business and residential streets. For this work, the city generally assigns smaller Austin-Western patrol sweepers, although some of the Model 40's are assigned as the smaller sweepers are gradually being replaced with sweepers having a larger hopper capacity, thus permitting the transportation of sweepings to more centrally located temporary storage points.

The city assigns its 275 hand cleaners to patrol over 250 curb-miles of downtown and other important districts daily. For the most part, these men use pushcarts.

This force is strengthened during the spring of the year by approximately 100 men and 35 trucks. Also during the heavy-cleaning season, three Hough Hi-Lifts are used to scrape and load the dirt, sand, and abrasives that accumulate over the winter. Chicago also has experimented with the Ernest Holmes truck-mounted, hydraulic front-end shovel. It has proved so satisfactory that the city is ordering three more and will gradually increase this number. It has produced substantial savings in manpower and shows promise of usefulness for snow removal during the winter months.

The street dirt carts formerly used for the most part were large boxes holding approximately a half cubic yard, mounted on large iron wheels. The cart was heavy, and not too steadily handled. It has gradually been replaced with a removable container type. However, the Tarrant Company's Model Tarco No. 17 seems to be the best liked by the cleaners. This cart has large wheels, rubber tires in some cases, a removable container, and a caster which permits braking the cart.

Cleveland's Power Sweepers Pay Dividends

Cleveland, with a population of slightly more than 900,000 and with 1,280 miles of paved streets, leans heavily on the use of mechanical equipment. It has only 55 men working alone with broom and cart, and only five men working in a crew; and these men work only on special assignments. This means only 0.06 man per 1,000 population, or 4.3 men per 100 miles of streets.

To make the use of mechanical equipment practical, Cleveland posts signs on the day before a side of a street is cleaned which read "No parking on this side of street on account of street cleaning." After some education, the public has learned to accept these signs. The city has 78 miles of streets where parking is prohibited at all times and 107 miles of streets where parking is periodically prohibited. (See photos on next page.)

Summary of Equipment and Personnel Used for Street Cleaning in Large Cities

City	Population	Miles of Streets	Number of Flushers	Number of Mechanical Street Sweepers	Manual Street Cleaning: Number of Employees Used	Manual Street Cleaning: Per 1,000 of Population	Manual Street Cleaning: Per 100 Miles of Streets
Baltimore	950,000	1,000	10	0	514	0.6	50
Boston	800,000	725	5	20	455	0.6	64
Chicago	3,600,000	3,400	..	35	510	0.14	15
Cleveland	900,000	1,280	9	16*	60	0.06	4.3
Detroit	1,850,000	2,100	11	20	160	0.09	8
Los Angeles	2,000,000	4,500	..	40	235	0.12	5
New York	7,900,000	4,500	..	120†	5,200	0.7	115
Philadelphia	2,000,000	1,800	..	17	622	0.3	35
Washington	800,000	875	12	2	378	0.5	45

* Each sweeper averages 45 curb-miles per day, six days a week.
† In 1951, each sweeper covered 12½ curb-miles per shift.

Street sanitation comes under the supervision of Samuel F. David, Director of Service. His department sweeps and flushes downtown streets every night from midnight to 8 a.m. Other arterial streets are cleaned three times weekly. The rest of the city is cleaned by the ward system three or four times a season. The city has 18 Elgin sweepers, and each averaged 45 curb-miles per sweeper per day, six days a week.

The department has four front-end loaders that pick up the sweeper debris and load it into trucks. These average eighty-five 3-yard piles per day.

Each sweeping operation is followed by a flusher. The city has nine flushers and three Eductors.

Detroit's No-Parking Ordinance Helps

Detroit, Mich., was a population of 1,850,000 and 2,100 miles of paved streets, uses 20 Wayne and Elgin sweepers and 11 Etnyre and South Bend flushers, with four more flushers ordered. The residential streets are cleaned mechanically and the downtown streets are cleaned mechanically where possible. Detroit has 160 men working alone with broom and cart assigned to the downtown area. This gives a factor of 0.09 man per 1,000 population, or 8 men per 100 miles of paved streets. The city has 79 miles of streets where parking is prohibited at all times, and 199 miles where parking is prohibited periodically.

The department occasionally uses welfare recipients in gangs for sweeping. However, the number is not fixed and the department reports them to be an unreliable source of labor.

Detroit's "no-parking" ordinances give assistance to street sanitation. Temporary, portable no-parking signs are placed on streets early, giving two or three days' advance notice that on a given day parking will be prohibited to permit cleaning. In addition, the city is now restricting parking on all main arteries from 2:30 a.m. to 6 a.m. to assist in both

Boston makes good use of these short-wheelbase White trucks equipped with Etnyre flushers. As an aid to street cleaning, Naccanal detergent has been added to the water being applied to the streets by the two trucks shown above.

Through enforcement of the "no-parking" regulation, Cleveland is able to keep curbs free of parked cars on street-cleaning days.

street cleaning and snow removal. Carl D. Warner, Commissioner of Public Works, has charge of these operations.

Los Angeles, with a population of 2,000,000 and with 4,500 miles of paved roadways, also likes to use plenty of mechanical sweepers. Sweeping ranges from daily on some boulevards to monthly on residential streets. The city has 40 motor sweepers working two or three 8-hour shifts daily. Austin, Elgin, and Wayne sweepers make up this total, with the latter in the majority. L. Miller, General Superintendent of Street Maintenance, has charge of the work.

Los Angeles maintains 184 men working alone with broom and pushcart, and 51 men working in crews who sweep certain special sections. This is a total of 235 men on hand work, or 0.12 man per 1,000 population, or 5 men per 100 miles of paved streets.

Los Angeles has not found it necessary to prohibit parking in order to assist street sanitation. This probably can be attributed to the excessively large street mileage here, equal to New York City's street mileage, even though Los Angeles has roughly one-fourth the population. Nevertheless, the parking problem is of such magnitude that it cannot be ignored. The city has 183 miles of streets where parking is prohibited, and 176 miles of streets where parking is prohibited during the rush hours only.

New York City Tries Alternate-Side Parking

New York City, with a population of 7,900,000 and with 4,500 miles of paved roadways, is experimenting with the method that has proved successful in Cleveland and Detroit. Several test areas have been established as alternate-side parking districts. Parking is prohibited on the north or west sides of certain streets on Mondays, Wednesday, and Fridays; and is prohibited on the south or east sides on Tuesday, Thursday, and Saturdays. The results so far have proved encouraging, but show the need for vigorous enforcement to be successful. The city has 120 mechanical brooms in use. In 1951, each broom covered 12½ curb-miles per shift. The city also is experimenting with central dumping points or "dirt stops" where the sweepers will deposit their loads and have these picked up by mechanical loaders. This eliminates depositing the debris in piles in the streets.

New York City's Hand Crews

However, the densely populated area of New York City still requires a lot of hand sweepers. About 1,000 men work alone with pushcart and broom, another 4,000 work in crews and are assisted by a truck, and another 218 men patrol the expressways with a small pickup truck. This means a total of about 5,200 hand laborers, approximately 0.7 man per 1,000 population, or 115 men per 100 miles of streets. No figures are currently available on the number of miles of streets with restricted parking, since this is currently being changed.

Andrew Mulrain, Commissioner of Sanitation, who has charge of this work, anticipates mechanizing the street-sanitation work further but does not expect to reduce the number of hand sweepers. These men are simply reassigned to other areas needing further sanitation attention. He feels that alternate-day parking is the only way to maintain efficiency of mechanized sweeping in these areas.

Philadelphia, with 2,000,000 inhabitants and 1,800 miles of paved roadways, limits the use of mechanical equipment to boulevards and to streets where parking is prohibited. For hand-sweeping purposes, the city can assign 180 men working alone with broom and cart, although this figure may drop somewhat. It also can employ 442 men working in crews, although this figure also may drop by nearly 100. Based on the authorized strength, this means 0.3 man per 1,000 population, or 35 men per 100 miles of paved roadway.

This city occasionally uses temporary, portable no-parking signs on streets in advance of cleaning, but has not made the practice widespread. The city has 161 miles of streets with parking restricted at all times and 21 miles where parking is restricted during the rush hour. Its fleet of power sweepers consists of 17 Municipal Supply "Gutter Snipes," six of the 2-yard capacity, and 11 of the 1½-yard capacity.

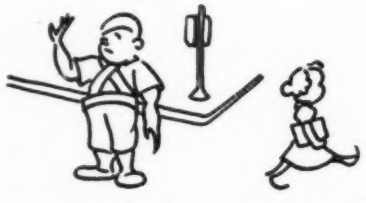
Washington, D. C., with a population of 800,000 and with 875 miles of paved streets, uses two mechanical brooms to clean bridges, underpasses, and similar areas; it uses flushers extensively. Washington also has 418 miles of 15-foot alleys as well as stabilized and unpaved roadways. Twelve flushers are operated at night and two in the daytime during the warm weather months. During leaf-gathering and cold-weather seasons, only six flushers go out. All flushers have a capacity of 2,600 gallons.

Hand work is carefully scheduled into five categories. The city has 210 men working alone, pushing carts and brooms, assigned to routes in the business areas and center of the city. It has 111 men working in crews of two "broomers" and one loader in suburban areas. It has 39 men cleaning public alleys in the central portion of the city. It has six men in a squad who work on block-to-block cleaning campaigns. It has 12 men who flush paved roadways according to schedule.

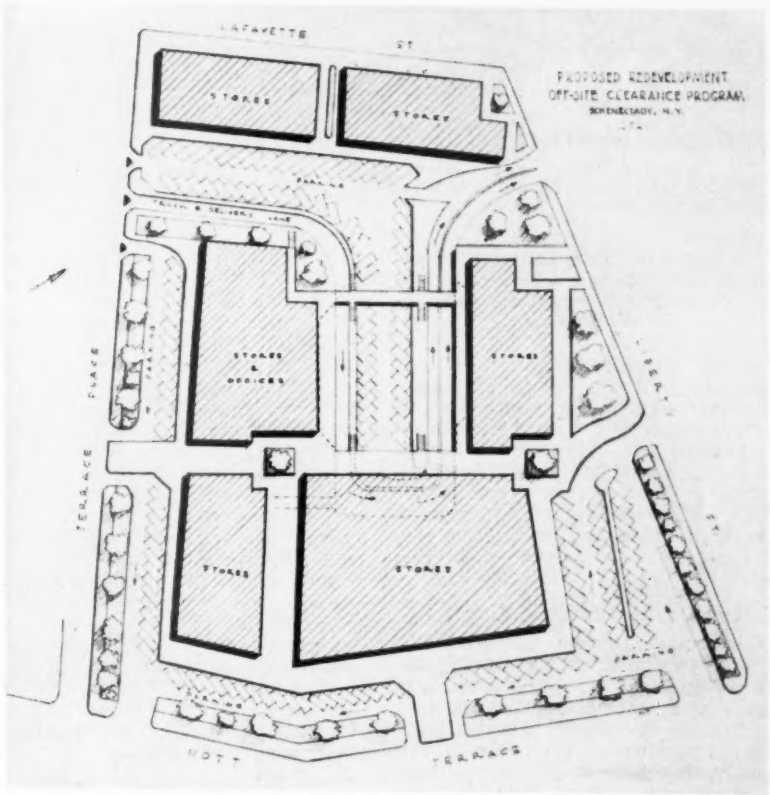
This gives a total of 378 men hand-cleaning the streets, or 0.5 man per 1,000 population, or 45 men per 100 miles of streets.

Washington 's ordinances allow it to place temporary, portable no-parking signs to assist street cleaning; however, the city does this only in connection with snow and leaf removal. The city has 89 miles of streets where parking is prohibited at all times, and 125 miles where parking is prohibited during the rush hours only. W. A. Xanten, Superintendent of Sanitation, has charge of the work.

A copy of the report tabulating these data can be obtained by writing the Bureau of Municipal Research, 311 South Juniper Street, Philadelphia, Pa.



State Division of Housing Proposes Shopping Center to Aid Schenectady's Slum Clearance



A tentative plan for layout of stores, multi-deck parking facilities, and traffic circulation in a shopping-center proposal for a slum-area site in Schenectady. See the front cover of this issue.

AN UNUSUAL PLAN for using slum-clearance and public-housing funds of New York State to clear a seven-acre, two-block substandard tract in downtown Schenectady, for construction of a shopping and business center with ample parking facilities, was announced by State Housing Commissioner Herman T. Stichman on December 15. A sketch showing the site's development possibilities is reproduced on the front cover of this issue.

Commissioner Stichman has offered to provide $725,000 of state funds to the Housing Authority of the City of Schenectady, headed by Chairman Richard J. Carmichael, for such a purpose. Part of the cleared land would be made available at reduced cost for the shopping and business center, which would be developed by local interests under the sponsorship of business associations of Schenectady, and the remainder turned over without cost to the city for automobile-parking use.

The Commissioner stated that the seven-acre tract could be integrated with an adjoining area which is to be cleared under Title I of the Federal Housing Act of 1949. The slum-redevelopment proposal is part of a state loan and subsidy program under which the Schenectady Housing Authority has built a 310-family garden-type housing project on a different site for families of low income, one of three such state-aided projects in the city. The present state loan of $3,987,000 will be increased because of the enlarged program, since only $600,000 was previously earmarked for the slum-clearance project.

One of the interesting features of the planning study and preliminary sketches by the State Division of Housing is the opportunity to develop a split-level automobile-parking area because of the natural topography of the site. By the introduction of walks and ramps, it would be possible for pedestrians to reach any portion of the shopping area without crossing the path of vehicular traffic, and provision might be made for loading and delivery areas at the lower level of the stores.

Like many cities, smaller and larger, in the state and throughout the country [Commissioner Stichman said], Schenectady has been spreading beyond the city's limits. Great supermarket shopping centers have been built outside many municipalities with consequent loss of commercial business within the city and of municipal tax revenues. An example is the extensive shopping center recently completed outside Buffalo. Schenectady will now have an opportunity, working in cooperation with local merchants, to use the $725,000 fund to clear an extensive central area of its substandard structures and use the land at marked-down values for developing a supermarket shopping and business center with ample parking facilities within city limits. Land which is now a liability because of its slum character may thus become a great asset by cooperation between public and private groups. If Schenectady and its merchants can carry out the proposed plan, it will be one of the first in the country to reverse present trends of stores and business to move outside city limits with results so adverse and costly to the municipalities. This proposed pilot project shows how slum-clearance public funds can help most effectively in municipal redevelopment.

To Recapture the Right-of-Way for Pedestrians

IN HIS SPEECH at the recent National Planning Conference, in Boston, Walter Gropius urged small cities, before it is too late, to conceive new contemporary community features which will exert so stimulating an influence on the citizen who comes to live there that he will soon change from an onlooker into a participator.

I suppose [said Professor Gropius] that such a desirable trend could be best started by a campaign to recapture the right of way for the pedestrian. Every citizen is both, now a driver, now a pedestrian; but while everything is being done for the car and its driver, the pedestrian has been pushed against the wall in the process of building up the great net of automotive traffic which has exploded our communities.

I am convinced that it is just as necessary, or even more so, now to create, in addition, independent pedestrian traffic nets, separate and protected from the automobile. Such a superimposed pedestrian path pattern should start and end, not at a strung-out main street, but in a beautiful plaza, prohibited for cars, the very heart or core of the unit, to serve as the local center for the exchange of public opinion and participation in community affairs. Here, from daily social intercourse in trade and recreation, from gossip about local and world news, grow the grass roots of politics.

Such a pedestrian square, a beautiful plaza of human scale with its centralized social purpose, will give the inhabitant a feeling of belonging and pride. It would prepare him for the sharing of responsibility, for conscientious voting, and for his taking an interest in community planning which the planner so badly needs for future action. This is an ardent plea for the modern plaza or community core, the most vital organ to promote our democratic process.

The City Tells Its Story

Municipal Public Relations

"Tell It to City Hall" becomes sound advice in once cynical, apathetic Philadelphia

By HAROLD F. SCHNEIDMAN, *Chief Bureau of Public Information and Service Office of the City Representative Philadelphia, Pa.*

PHILADELPHIA'S experiment in public relations — the establishment of a two-way channel of free and continuous communication between government and citizen — already is showing some tangible results in a field which deals largely with intangibles.

The program was awarded the "Silver Anvil" of the American Public Relations Association as the outstanding effort in its field for 1952. Starting from somewhat behind scratch in a city where indifference to the public was a byword, the new approach has catapulted Philadelphia to leadership in municipal public relations.

Civic discussion now flourishes in a city once known for its apathy to governmental processes. "Tell it to City Hall" is no longer a cynical phrase but sound advice.

In its award-winning presentation, the city's Bureau of Public Information and Service pointed out that in Philadelphia all this is revolutionary, but that the work might well be spelled with a capital "R." The primary objective of the program, the Bureau said, is to "reintroduce to Philadelphians a concept of government which was born in that city but which has been foreign to it for many years — a government responsive to the wishes of its citizens; a government in which they are not only permitted but encouraged to participate."

Regenerate Town Meeting Idea

Essentially, the effort is directed t "regenerating the spirit of the old town meeting." Problems and plans of the city administration are presented to the people *before* policies are formulated. The citizens are given time to crystallize their thinking, and to make their opinions known.

The mechanics of the operation, however, involve utilization of the most modern methods, techniques, and media of mass communication. The voice of the town crier has been amplified by press, radio, and television. The citizen has been invited in to look over the management of his town and make his suggestions for more efficient operation.

The climate in which such a program could flourish was created when Philadelphians approved a new Home Rule Charter and dismissed the governmental clique which had ruled without interruption for 67 years. The new Mayor, Joseph S. Clark, Jr., promptly pledged "an end to government from smoke-filled rooms" and took the first step in that direction by opening meetings of all boards, commissions, and committees to representatives of the press and radio.

Among the new offices called for by the Charter were those of the City Representative, responsible for disseminating information to the public, and the Mayor's Office for Information and Complaint, designed to provide a direct point of contact between government and citizen.

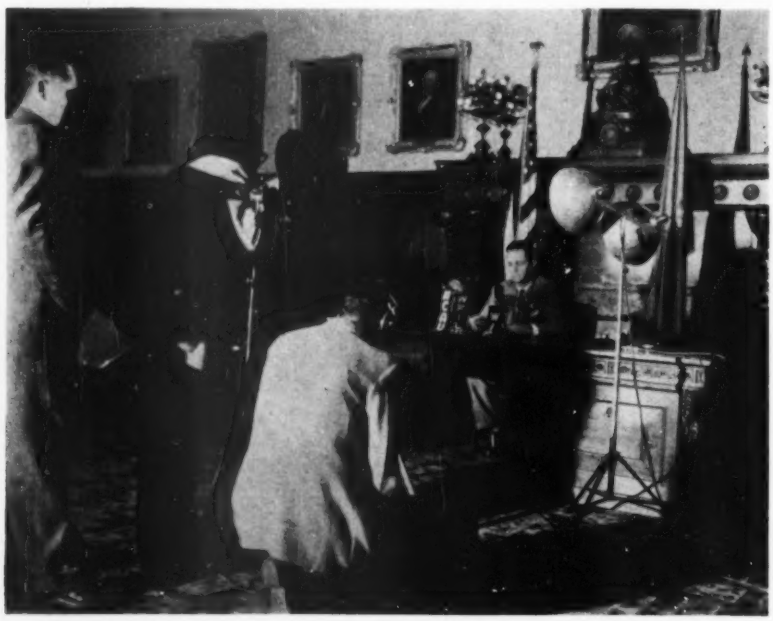
MPR Role on High Policy Level

The Bureau of Public Information and Service is the only agency under City Representative Walter M. Phillips, and carries the major burden of public-information duties. The City Representative is a member of the Mayor's four-man cabinet, thus assuring that the Bureau's thinking is reflected at the highest policy level, and that it will not become merely a "Department of Amplification, Retraction, Apology, and Repair."

In its routine function, the Bureau has produced approximately 700 releases for the press, the radio, and for television on the activities, plans, problems, progress, and campaigns of the city government, with a startling average of about 90% of the items being used by the various media. It also carries out those publicity and promotion duties common to most city press bureaus.

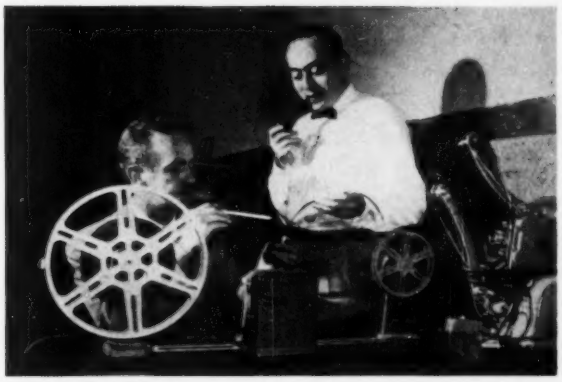
On this framework of essential services, the Bureau has overlaid a more imaginative pattern of activities. Radio and television programs, created and produced by the Bureau, play a major role.

"Tell It to the Mayor," a twice-monthly TV presentation, is perhaps the most spectacular and successful of the varied efforts in this direction. Essentially an audience-participation



Mayor Joseph S. Clark, Jr., reports to Philadelphians via radio and television.

Municipal machinery operates openly in Philadelphia. Meetings of boards and commissioners are open, and public hearings are held on controversial questions. The citizen speaks his mind, and government listens attentively.



Harold F. Schneidman, standing, who is chief of the Philadelphia Bureau of Public Information and Service, is seen checking one of the Bureau's films with Don Mattern, a script writer.

show, it offers the average citizen an opportunity to present his complaints directly to the head of his municipal government, and to air his most cherished opinions to a wide audience.

Each of the "Tell It to the Mayor" telecasts is devoted to the aspect of municipal government which is currently most controversial. Individuals and organizations are invited to register their complaints, while the Mayor and those of his top administrators who are directly concerned with the problem undertake to provide the answers.

Completely unrehearsed, the program owes much of its success to its informality and spontaneity.

Other Radio, TV Shows

Another successful telecast, presented weekly, is entitled "Public Servant No. One," and deals with behind-the-scenes activities of the Police and Fire Departments. Steering clear of the danger of devoting these shows to the "big brass" of the departments, the Bureau's one-man radio and television section scripts these programs to exploit such subjects as the Fire Department's rescue squad or the Police Department's accident-investigation division.

In the radio field, "Report to the People" is a weekly broadcast by the Mayor, a cabinet member, or a councilman. These programs permit the municipal officials to spell out the specific issues of the day, the contemplated actions of the various branches of the city government, and the effect those actions will have upon the individual citizen. This program is the first public-service broadcast ever to be carried regularly by all Philadelphia stations.

Numerous other radio and television appearances are arranged for municipal officials and employees. Local programming digests most of these appearances, but networks give some a wider audience.

Aimed at the same general target of combining general and specific information is the Bureau's attempt to make meaningful the traditional "City Hall tours," offered to school children and civic groups in the guise of educational activity. This fresh approach was demonstrated when the Bureau joined with the Board of Education in sponsoring a "Summer Workshop" which brought teachers to a series of round-table discussions with city officials.

Again venturing outside the accepted framework of municipal information service, the Bureau is attempting to make the city's annual report something more than a work of technical beauty and a source of reference for students of municipal government. The basic theory is that of presenting a "running" report in progressive doses, more palatable and more easily digested than the usual bulky year-end document.

The aptly named "Report to the People" is one element of the plan. Another is an outgrowth of the Mayor's demand for quarterly reports from his department heads. These lengthy statements are summarized by the Bureau's staff, and the highlights of the summaries are embodied in a news release.

Films Show Both Good and Bad

Motion pictures planned and produced by the Bureau also fit into this program by portraying the city's physical needs and the steps taken to meet them. The films are designed for information, not promotion, and they reveal the shoddy and seamy side of the city's life as well as the assets of which it likes to brag.

In further pursuit of its function of disseminating information, the Bureau directly promotes civic discussion of the more important problems facing the citizen and his government. It has stimulated public debate over the issues of new taxes, the Planning Commission's proposals for the redevelopment of the central-city area, air-pollution-control measures, and numerous other items. In virtually all cases, the Bureau does not seek to influence public opinion, but rather to present factual data and stir up discussion of the pros and cons, so that the administration's policy decisions may be made in the light of the citizens' sentiments.

The power of public opinion may on occasion spend itself fruitlessly, however, unless it is carefully mobilized and channeled in the essential direction. On such occasions, the Bureau marshals interested agencies into "cooperating committees" which attempt to assure that the voice of the people is heard and acknowledged. One instance of successful effort in this direction was the Bureau's campaign for the Delaware River Port Authority legislation.

Citizen Response is Great

While the Bureau has been engaged in its varied methods of projecting government's story to the people, the Mayor's Office for Information and Complaint has been overwhelmed by citizen response, in the form of visits and telephone calls.

Complaints are recorded, and referred to the office directly concerned with the problem. The responsible official replies by phone if possible, and in writing if necessary. Meanwhile, the complaint section keeps the complainant informed as to which office is handling the matter, and maintains an "action pending" file to ascertain that action is taken within a reasonable time.

The value of the office cannot be measured in terms of sidewalks repaired, vacant lots cleaned up, gamblers arrested through "tips," or other concrete results. Its real importance is in its function as a contact point between the citizen and his government.

Only time will determine if the program fulfills its long-range objective. But meanwhile, Philadelphia's citizens are better informed on municipal matters; they are taking a more intelligent interest in the city's problems; they are discussing those problems in the light of their new knowledge, and they are telling the administration what they think should be done.

AMA Sets Program for 1953

THE American Municipal Association reaffirmed its support of the public-housing program at the 29th annual American Municipal Congress held in the glittering new $20,000,000 Statler Hotel in Los Angeles, December 1-3.

A drive to change this policy and shift to a position of complete neutrality was choked off in the resolutions committee. There were rumblings of a possible floor fight on the subject but nothing came of it.

However, the Los Angeles conference did produce the first roll-call hassle in the history of the AMA. A controversial resolution urging the return of tidelands to state ownership provoked a spirited debate.

The opposition drew some support from the floor among members who argued that this was a private fight and that the American cities, as a group, should have no part of it. But, on a roll call, the resolution carried by an overwhelming 81 to 13.

The conference was the largest the American Municipal Association has had, with 462 delegates and 171 wives. The delegates came from 41 states. There were also guests from Canada, Western Germany, Japan, Bali, and Israel.

The tidelands resolution was one of 13 adopted by the conference on the closing day of the three-day parley. Of the others, four dealt with the growing municipal crisis in traffic congestion, a topic which dominated the panel discussions and attracted the interest of the Los Angeles press, which is waging a raucous campaign for a more efficient highway system in that auto-clogged metropolis.

The four resolutions urged:

1. That the Federal Highway Act be amended to permit county road officials to allocate federal-aid funds for secondary-road improvement within the boundaries of all incorporated municipalities, regardless of size

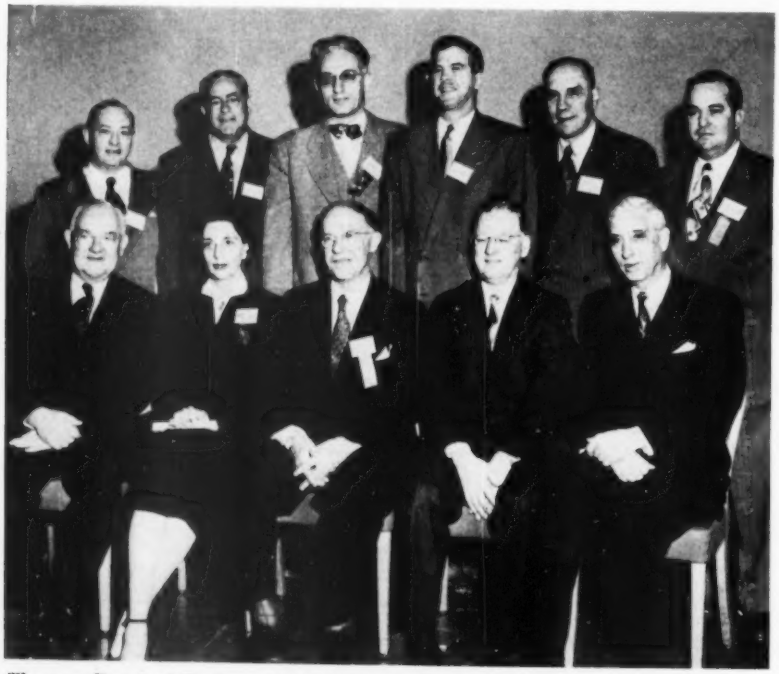
2. That all funds derived by the federal government from highway users be ploughed back into highway constructions and maintenance

3. That a national coordinating committee—consisting of representatives of the AMA, the American Association of State Highway Officials, and the National Association of County Officials—be set up to analyze the nation's highway requirements and determine the needs at each level of government.

4. That a conference be called immediately with the Bureau of Public Roads to write a clear definition of the term "urban," with a view that highway funds earmarked for urban roads be spent within incorporated communities.

Other resolutions adopted at the Los Angeles meeting called for:

- Congressional recognition of civil airport needs
- An amendment to the tax laws to permit industrial plants to write off the cost of installing equipment to control air and water pollution
- The establishment of a national commission to work out a feasible method of defining the area of service for each level of government and for allocating appropriate sources of revenue
- A reciprocal agreement between federal and local governments on payroll-tax deductions
- A comprehensive study of metropolitan-area problems through the establishment of a committee representing all levels of government
- A survey of municipal liability insurance, with a view to the possible creation of a national cooperative insurance program through the American Municipal Association
- Legislation by Congress to halt the encroachment by federal agencies on taxable land within the municipalities
- The establishment of a committee to draft, with federal agencies, a positive policy for the eventual termination of temporary war housing, or a satisfactory arrangement for maintaining standards and making payments to the cities in lieu of taxes commensurate with the actual cost of services rendered.



The new Board of Trustees of the American Municipal Association. Seated, left to right: Mayor Fletcher Bowron, Los Angeles; Mrs. Davetta L. Steed, executive secretary, North Carolina League of Municipalities; Mayor William B. Hartsfield, Atlanta, Ga., president; Mayor John B. Hynes, Boston, vice-president, and Mayor William E. Kemp, Kansas City, Mo. Standing, left to right: Max A. Conrad, executive secretary, League of Iowa Municipalities; Tom McCoy, executive director, Utah Municipal League; Herman Kehrli, executive secretary, League of Oregon Cities; Mayor Allen C. Thompson, Jackson, Miss.; Clarence C. Ludwig, executive secretary, League of Minnesota Municipalities, and Herbert J. Bingham, executive secretary, Tennessee Municipal League.

Keynote on Financial Plight of Cities

The three days of panel discussions bore down heavily on the financial plight of the cities. Mayor A. E. Cobo of Detroit, completing his term as president, sounded the keynote of the conference in his presidential address. Said Mayor Cobo:

> What are the principal difficulties facing our American cities today? Finance probably comes first. The problem presented to the cities is how to keep revenues increasing as expenses rise, and how to keep expenses down when the income fails to expand. The situation is complicated because the city does not control the economic circumstances which govern employment, prices, and wages. Everything it does is affected by these factors and it must adjust its program to them. . . .

Mayor Cobo described the job to be

(*Continued on page* 179)

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Likewise, Monotube floodlighting poles come in standard types and sizes from 20 to 100 feet—ideal for protecting vital municipal facilities, utility areas, defense plant grounds, construction work, railroad yards, parking areas . . . *every* kind of facility or activity.

Best of all, both Monotube street lighting and floodlighting poles are well known for exceptionally easy, simple installation. They serve for years with little if any maintenance.

Find out *now* how you can give vital areas extra nighttime protection at minimum cost with durable, steel Monotubes. For information, write to The Union Metal Manufacturing Co., Canton 5, Ohio.

UNION METAL

Monotube Street and Floodlighting Poles

Chicago Modernizes Its Street-Lighting System

By LLOYD M. JOHNSON
Commissioner of Streets and Electricity
Chicago, Ill.

TO REDUCE accidents and protect property at night, extensive plans were begun at the termination of World War II to provide better illumination on the 3,650 miles of city streets in Chicago's 212-square-mile area. The first stage provided $22,000,000 for 900 miles of new street lighting. In full swing by the early part of 1947, 9,500 efficient reflector-refractor type luminaires, ranging in size from 6,000 to 20,000 lumens, have been installed to date on 200 miles of arterial streets, thereby bringing 20% of our arterial streets up to I.E.S. recommendations, with an additional 35 miles now under construction. The illumination on these improved arterial streets has been increased over a range of 200% to 1,000% by the installation of efficient and adequate street-lighting equipment.

Residential Lighting

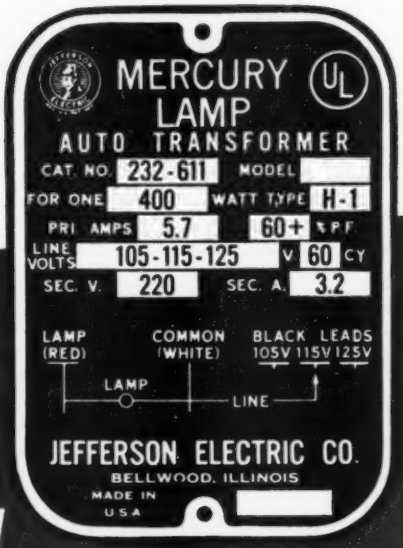
In this same period, we installed 12,500 modern 2,500-lumen street-lighting units on 350 miles of residential streets in areas having no lighting units and in areas illuminated with obsolete gas and gasoline lamps. At the start of this program we had 5,000 gas and gasoline lamps in service; in October 1952, only 34 remained, and now we have none.

To date we have 550 miles of residential and arterial streets lighted to recommended levels. Plans and specifications have been prepared for the installation of another 10,000 street lamps in 1953. A total of 33,500 tapered Monotube steel poles will be used in all the arterial and residential installations mentioned.

Bond funds voted in 1944 and 1946 provided $8,000,000 for the initial phase of our residential street-lighting program. An additional $8,000,000 in bond funds was voted in 1951 and committed by the end of 1953. To date motor-fuel-tax funds in the amount of $6,000,000 have been spent on arterial street-light installations,

Installations on Lightfoot Street, from Hiawatha Street to Caldwell Avenue, a residential area, consisted of General Electric 2,500-lumen multiple incandescent luminaires on 3.7-inch by 6.5-inch 20-foot tapered steel poles spaced 165 feet apart on each side of the street and having a mounting height of 20 feet, a bracket-arm length of 12 feet, with an overhang of 10 feet.

Improved street-lighting conditions on Archer Avenue, from Cicero Avenue to Harlem Avenue, was made possible by the installation of 20,000-lumen multiple mercury-vapor Westinghouse luminaires on 4-inch by 9-inch 35-foot Union Metal tapered steel Monotube poles. The poles are spaced 110 feet apart, have a bracket arm 8 feet in length with an overhang of 6 feet, and a mounting height of 30 feet.



HERE'S *THE NAMEPLATE TO LOOK FOR ON MERCURY LAMP TRANSFORMERS*

Beauty, quality and compact design are all combined in the new Jefferson Transformers. Sparkling new "Dura-Gray" finish eliminates eye-sore installations—blends with every surrounding—makes pole-top installations clean, neat, and streamlined as well as weatherproof.

The new revised line of Jefferson Mercury Lamp Transformers is designed and manufactured to give *peak* performance and *greatest* economy from your mercury lamp installations. No expense has been spared in giving you a transformer with *every feature vital to ideal lamp performance.*

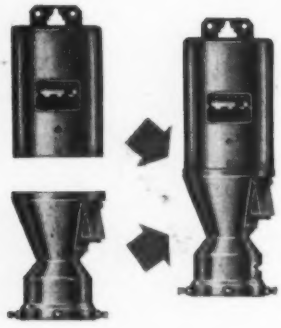
Jefferson Transformers are unmatched in performance and life because of these engineering advances:

- Three primary taps (not just two) are provided for a close match with line voltage. Long lamp life, full brilliance, positive starting, and maximum satisfaction result.
- Hot-dipped galvanized deep drawn steel cases give lifetime protection against severest weather. There are no seams to leak and be forced open by freezing. Scratches through paint *do not* cause rusting out. *All* Jefferson Outdoor Transformers are *first quality* and are in this rustproof case.
- Press-fit riveted core for positive electrical uniformity in manufacture.
- Leads cannot be pulled loose as they are securely stapled to the coil.
- Solidly welded bracket has keyhole mounting slot and two holes for locking in position. *One* man can install a Jefferson Transformer.
- The new Jefferson line includes transformers for operation of EH-1 and JH-1 at extremely low temperatures.

Get the most out of your mercury lamp installations by insisting on Jefferson. Over a third of a century of specializing in transformer design and manufacture is a *real* guarantee of top-flight performance.

Write for latest illustrated Bulletin 521-5.

JEFFERSON ELECTRIC COMPANY
Bellwood, Illinois



Only Jefferson has this Universal Adaptor!

All wall or post mounting Jefferson Transformers can be converted to pole-top models in minutes. Pole-top adaptor fits 2½" to 4" O.D. poles. Reserve stock cut to a minimum as one transformer fills most needs.

JEFFERSON TRANSFORMERS

making a total of $22,000,000 for residential and arterial street lighting expended from 1947 to 1953. Chicago now has 120,000 lamps, ranging in size from 1,000 to 20,000 lumens. The cost per capita per day to maintan this system is one-quarter of one cent. On this basis we believe large cities can afford good street lighting. Our ultimate goal is the complete rehabilitation and modernization of Chicago's street-light system, and we believe that in a reasonable period of time all Chicago's streets will be illuminated to levels that will safeguard the welfare of citizens after dark.

On Halstead Street, from 85th Place to 129th Street, an area designated as arterial, the average spacing of the 4-inch-by-8-inch 33-foot tapered steel poles is 90 feet. Line Material 10,000-lumen series incandescent luminaires are mounted at a height of 25 feet. The brackets arms are 8 feet in length and have an overhang of 6 feet.

From Whale Oil to Mercury-Vapor Lights in Philadelphia

By J. H. WENNER
Street Lighting Engineer
Middle Atlantic District
Westinghouse Electric Corporation

IN DECEMBER 1881, 49 carbon-arc lamps, installed between the Delaware and the Schuylkill Rivers in Philadelphia, Pa., were turned on for the first time and a journalist of the day recorded the event as ". . . making the street almost as bright as the daylight." When the 135 Westinghouse mercury-vapor lights were turned on in the same 20 blocks of Chestnut Street several months ago, they gave 25 times the average illumination on the street as did the original carbon-arc lights and 9 times the average illumination put out by the incandescent luminaires they replaced. The efficiency of the new installation is due largely to a luminaire design which intensifies and directs the light to the street instead of dissipating it upward.

This Chestnut Street relighting is one step in a 15-year plan for the modernization of street lighting in Philadelphia under which the Philadelphia Electric Company expects to double the number of street lights in the city by 1965. When the project started, there were 36,000 electric street-lighting units and there are now over 38,000, a number which will be increased to more than 72,000.

Whale Oil Lamps

Street lighting in Colonial Philadelphia started with a few lamps maintained by the wealthy families outside their homes, and it was not until 1751 that the city assumed the obligation of providing public street lighting.

The early street luminaires were square lanterns designed by Benjamin Franklin to protect the feeble whale-oil-burning flame from wind and rain. This special type of lantern was designed because the art of blowing cylindrical glass lanterns had not as yet been mastered by the colonists. It was not until a local farmer was killed by three thugs, in the early 1800's, that there was real pressure brought to bear for better lighting on the streets.

In 1836 the first gas street lights were installed in the area of the original oil lights and nearly 70 more years passed before the flat-type gas burner was replaced by the Welsbach mantle. Not until 1913 was the Welsbach mantle introduced into Philadelphia proper.

Gas and Electric Lights

Interest was developing in the electric light at the turn of the century and with the building of the first central electric-generating station in Philadelphia by the Brush Electric Company, electricity was supplied for 320 arc lamps — 19 for municipal lighting and 271 for commercial lighting. The commercial customers were the Wanamaker store and the Pennsylvania Railroad's Broad Street station, a Philadelphia landmark which is now being razed. The municipal lights were installed along Chestnut Street from the Delaware to the Schuylkill rivers.

The new Westinghouse OV-20 luminaires utilizing the EH-1 mercury-vapor lamps are a far cry from the whale-oil lamps which served more as pilot lights than as protective and safety lights for Colonial citizens.

Two hundred of the same type of luminaires and lamps are also installed on the much-publicized Vine Street Project where they are mounted on Union Metal standards at a height of 33 feet. The units are on 12-foot brackets staggered at 75-foot intervals along the 133-foot-wide street, with 12-foot twin standards on the central traffic island. The result is a maintained average of 1.3 foot-candles.

Similar lighting, only at a 0.9 foot-candle average, has been installed on the recently completed Penrose Avenue Bridge which extends from the Airport Traffic Circle to 26th Street. It is the final 2½-mile link in a 12-mile mercury-vapor lighting project in South Philadelphia and utilizes 182 luminaires. This $14,000,000 structure, the largest ever built by the Department of Highways of the Commonwealth of Pennsylvania, was built to ease the traffic congestion between Philadelphia and Chester. It is a high-level cantilever steel bridge, 7,876 feet long and 148 feet above mean low-water level. The four-lane roadway, divided by a 3-foot median strip, is 51 feet wide. Designers of the bridge were Modjeski and Masters, consulting engineers of Harrisburg, Pa.

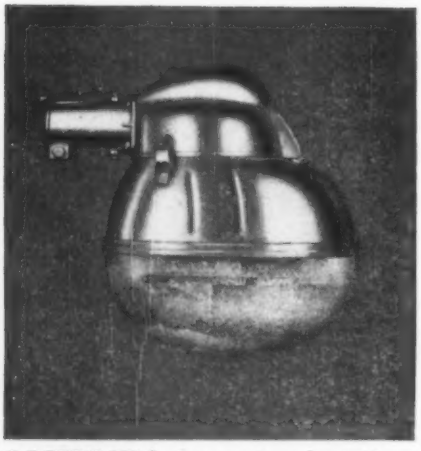
EDITORIAL NOTE: The historical facts for this article were supplied by the Philadelphia Electric Company's *Current News*, January 1952.

Maintenance Operations Faster and Safer with Ladder-Bearing Trucks

Seven of these ladder-bearing Internationals have been installed by the Los Angeles Department of Water and Power for use in maintaining the 97,000 street lights of Greater Los Angeles. The body of the truck was built by the Metropolitan Body Company, of Bridgeport, Conn., a subsidiary of International Harvester Company. This photo shows a truck on heavily traveled Hollywood Santa Ana Freeway.

BOTH HIGH-SPEED SAFETY AND LOW MAINTENANCE COST MADE POSSIBLE WITH G-E FORM 109 LUMINAIRES.

Safe speed with G-E Form 109's on two New Jersey Turnpike bridges



G-E FORM 109 features rectangular pattern, uses mercury or filament, gives economical mercury-lamp operation with magnetic coil.

NO NIGHT FATALITY has occurred on the two New Jersey Turnpike bridges illuminated by G-E Form 109 Luminaires, despite heavy traffic averaging 84,000 vehicles during every 24-hour period. The Form 109's make safe, high-speed driving possible where the New Jersey Turnpike bridges the Hackensack and Passaic Rivers, and warn motorists of the change from the usual straight-away travel.

USE FILAMENT LAMPS. Average intensity of 0.6 footcandles on the concrete roadway is provided by 133 G-E Form 109's equipped with 10,000-lumen, 20-ampere filament lamps, at a mounting height of 30 feet to light center, with 100-foot staggered spacing. Poles are isolated from the road area with a special bracket mount which mounts them over the side of the bridge structure.

LOW MAINTENANCE. The G-E Form 109 luminaire gives you the flexibility of using either mercury or filament lamps, the economy of G-E standardization, and extremely high light utilization. You are assured of minimum maintenance cost with quick, easy relamping and low glassware breakage. For information, ask your G-E representative for Bulletin GEA-5419. Or write Section 452-135, General Electric Company, Schenectady 5, New York.

GENERAL ELECTRIC

Bright Business in North Carolina's Capital City

One of the new mercury-vapor lights (above), and downtown Raleigh (above, right) with the new installations all aglow.

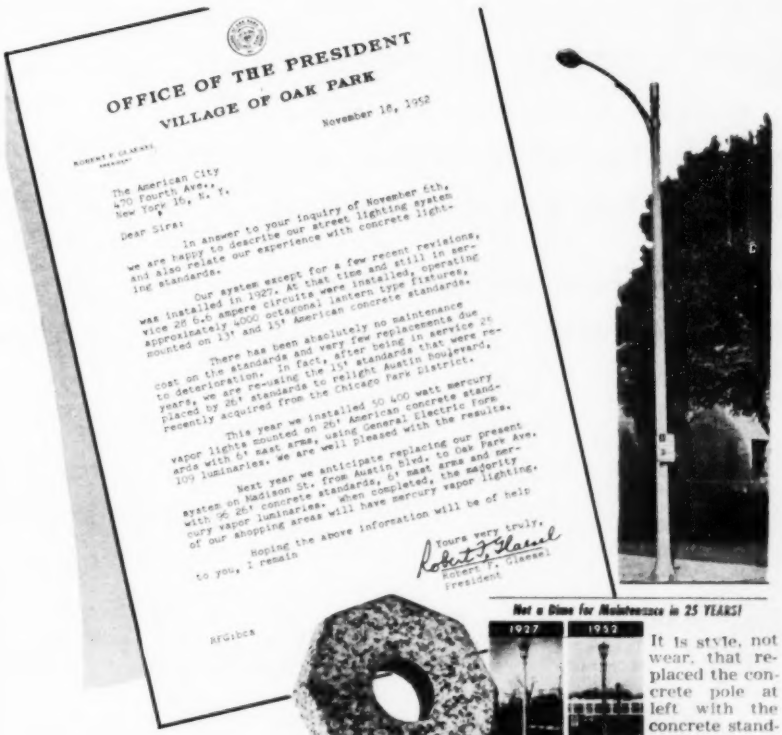
RALEIGH, N. C., has replaced 212 old lighting fixtures in the immediate vicinity of and on Fayettesville Street with 139 General Electric mercury-vapor luminaires. The Carolina Power and Light Company mounted these new installations 27 feet high, as against the 14-foot height of the old lights. To supply 10,000 lumens of light, the old lights consumed 575 watts. The new equipment furnishes 21,000 lumens for only 475 watts. This results in a level of illumination 2½ times the intensity recommended by the I. E. S. Standards Code.

Some Street-Lighting Features on the Way

Control of series and multiple street-lighting circuits will be described by J. I. Cissell, Application Engineer at South Bend Current Controller Co., Inc., of South Bend, Ind.

How a neater sidewalk appearance at less cost was obtained on Cleveland's relighting project will be illustrated by Walter Skove, Electrical Engineer in the Division of Light and Power at Cleveland, Ohio.

Oak Park, Ill., Stays with Concrete Lighting Standards



OFFICE OF THE PRESIDENT
VILLAGE OF OAK PARK

November 16, 1952

The American City
470 Fourth Ave.,
New York 16, N. Y.

Dear Sirs:

In answer to your inquiry of November 6th, we are happy to describe our street lighting system and also relate our experience with concrete lighting standards.

Our system except for a few recent revisions, was installed in 1927. At that time and still in service 28 6.6 ampere circuits were installed, operating approximately 4000 octagonal lantern type fixtures, mounted on 13' and 15' American concrete standards.

There has been absolutely no maintenance cost on the standards and very few replacements due to deterioration. In fact, 15' standards that were replaced by 26' standards to relight Austin Boulevard, years, we are re-using the 15' standards that were recently acquired from the Chicago Park District.

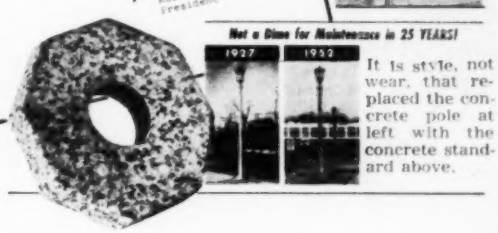
This year we installed 50 400 watt mercury vapor lights mounted on 26' American concrete standards with 6' mast arms, using General Electric luminaries. We are well pleased with the results.

Next year we anticipate replacing our present system on Madison St. from Austin Blvd. to Oak Park Ave. with 26' concrete standards, 6' mast arms and mercury vapor luminaries. when completed, the majority of our shopping areas will have mercury vapor lighting.

Hoping the above information will be of help to you, I remain

Yours very truly,
Robert T. Glasnel
President

RTG:bca



It is style, not wear, that replaced the concrete pole at left with the concrete standard above.

HIGHWAY SAFETY WITH PRISMO!

SUPER-HIGHWAYS, City Streets, County Roads all over America are being marked with Prismo "Life-Line," reflective traffic marking paint for increased highway safety . . . day and night.

Actual road and laboratory tests prove that Prismo "Life-Line", reflective traffic paints outlasts ordinary traffic paints three to five times.

Prismo lasts longer because the special plastic, Prismo Binder holds the PRISMO SPHERES in a vise-like grip. Prismo spheres reflect more light because they're rounder, clearer, more perfect in every way. Be Highway Safe with Prismo!

Mr. Traffic Engineer. . . write today for full informative bulletins on the many uses of Prismo, the Sphere of Safety.

"Nothing Equals Prismo But Prismo"

PRISMO SAFETY CORPORATION

HUNTINGDON, PENNA.

Traffic Control & Facilitation

Zone Streets for Public Transit And Downtown for Pedestrians

By JOSEPH W. LUND
President
National Association of Real Estate Boards

THE TOLL-ROAD SYSTEM, which gives the motorist access to a fast, unobstructed right of way for payment of a toll used to defray expenses of building the road, may be just as adaptable to movement of city traffic as it is to intercity traffic.

Another measure that may hold the partial solution to problems of traffic and circulation is more efficient use of our present street system through street zoning that would set aside certain streets for the exclusive movement of mass transportation. This can be a valuable aid to public transportation in providing cheaper, swifter, and more efficient transport to the central area than can be done by individual cars.

We may find, too, that in providing more parking facilities we will have our best means of eliminating the worst close-in blighted and slum sections. Downtown parking, however, is a new type of urban-land use that we have yet to develop to its most efficient use. If planning for parking goes hand in hand with work to improve public transportation, we will find that we can eliminate the need for a great deal of dead-storage space for cars in the central area.

Another means of smoothing circulation in downtown areas may be found in segregating certain streets or areas for pedestrian use only. City centers are not drive-in business locations. Those who shop, patronize restaurants and theaters, and use central-office space, have to shift from motorist or public-transit patron to pedestrian in order to use and enjoy the central area. When they do, they need a circulation system designed for the pedestrian. The store and office customer comes on the hoof.

Cities for the Citizens

Just now we are facing the fact that our great urban centers fall sadly short of what we are capable of making them. They lack the convenience, the beauty, the stimulating and attracting quality which is within our technical ability to supply. The first step in recreating the cities is to make it easier for the citizens of those cities to get around in them.

We will never solve our problems in traffic, parking, and transportation simply by lecturing the public to leave the family car at home and use public transportation so that the headaches of traffic engineers may be relieved. The public will, of its own accord, favor the civic efficiency of public tranportation over the relative inefficiency of the private car when public transportation is made easier to use, more convenient, and more pleasant than use of a private car.

This kind of improvement will also lead the typical citizen to give more thought to the mere economics of private and public transit as they affect him. An average estimate of annual home-to-work commuting cost by public transit is $75. The same daily trip by private car, including parking costs, adds up to $325 in a year.

The same type of discrepancy is faced by local government, whose costs the citizen also pays in his tax bill. It was recently shown in a study of the Boston metropolitan area that public expenditure required to accommodate one additional private automobile at the rush-hour peak would cost $4,000 for street facilities, whereas the capital expenditure for accommodating one individual passenger on the public-transit system would cost $1,000. When such capital expenditure has been made, the public-transportation investment is self-supporting through payment of fares, whereas the upkeep and maintenance of the highway is a dead loss to the municipality.

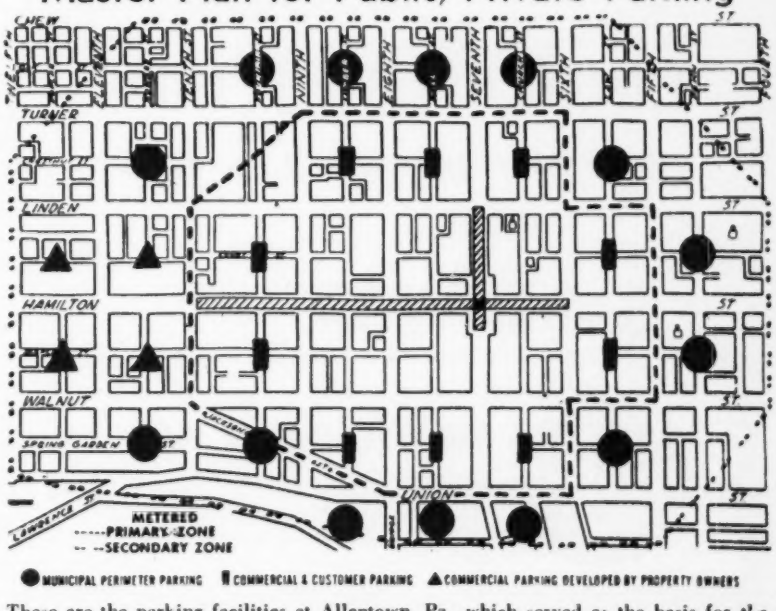
Park and Shop Made a Game

PARK AND SHOP is a new traffic game. The name will be recognized as that of the plan made workable and famous by the merchants of Allentown, Pa. The game was invented by B. Campe Euwer, an artist for *The Morning Call–Evening Chronicle*. It is played very much as Allentown's shoppers play the real game on city streets, the 10 parking lots, and in the stores.

Two to six persons draw cards for a shopping list, then drive their cars by dice rolls from home to a Park & Shop lot. From there they walk to the stores indicated on their shopping list, receiving penalties when they stop on an intersection. After they have completed their shopping, they pick up their car at the Park & Shop lot, make a call designated on the parking slip, and drive home. First one home wins.

City officials may obtain the game ($3) from the Traffic Game, Inc., Allentown, Pa., and brush up on the good results of the actual parking plan by reading the articles in THE AMERICAN CITY, March 1947 (page 77) June 1951 (page 137).

Master Plan for Public, Private Parking

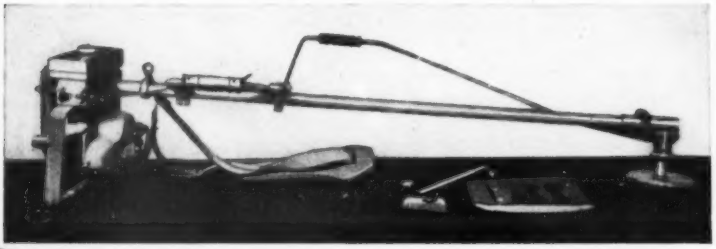


These are the parking facilities at Allentown, Pa., which served as the basis for the game of Park & Shop.

SPEED! SAFETY! EFFICIENCY! ECONOMY!

BRUSHMASTER

REVOLUTIONARY NEW BRUSHCUTTING MACHINE



- ONLY 35 LBS! EASILY OPERATED!
- OPERATION COMPLETELY PROTECTED!
- DOES WORK OF 6 HAND-CUTTERS!
- DOES NEATER, TRIMMER JOB!

Companies required to maintain right-of-way clearance are slashing costs with the new Brushmaster! Operated by ONE MAN, it does a faster, better job than a crew of good hand cutters . . . proven by time study! The one truly efficient, low cost way to clear brambles, vines, brush, bushes . . . even saplings up to 4" in diameter!

Opportunity . . . BRUSHMASTER FACTORY DEALERSHIP

RUGGED! DEPENDABLE!

Only 35 lbs. overall weight . . . yet Brushmaster is designed for peak efficiency! Air cooled, 2 cycle motor is really dependable . . . field tested under all conditions. Shaft-driven circular saw blade can be replaced in seconds. Write for complete specifications.

NOW . . . ACT QUICKLY

CHOICE TERRITORIES AVAILABLE!

$ **WRITE TODAY** on your own letterhead to Brushmaster Saw, Inc., 290 West Street, Keene, N. H. for complete details of procuring a valuable Brushmaster Factory Dealership!

$ **SURE-FIRE SALES PROMOTION PLAN . . . FREE.** Yes, every Brushmaster Factory Dealer receives a completely prepared package promotion plan which practically guarantees sales of this sensational new brush cutting machine!

H&R

BRUSHMASTER SAW, INC. IS A SUBSIDIARY OF THE FAMOUS HARRINGTON RICHARDSON ARMS CO., ESTABLISHED IN 1871

Write to 290-C West St., Keene, N. H.

BIG NEWS IN PARKING CONTROL

Announcing the NEW

DUBL DUAL

Gearshift Automatic Meter with positive time control

HERE it is! The new Dubl Dual Parking Meter . . . born by popular demand to fill a definite need in modern parking control.

Two identical meter mechanisms in *one* compact head do the work of two single meters . . . a big saving, greater convenience, easier checking and improved appearance in many locations.

For years Duals of the single type have demonstrated unmatched low-cost performance. *Now,* you have your choice . . . single head Duals or the new Dubl Dual Automatics. The mechanisms are the same in both types. And both embody *all* the latest time-and-money-saving Dual advancements.

If you plan to install or modernize metered parking, be sure to get all the facts on Dual single and new Dubl Dual Automatic Meters. It will pay! Write today for complete information.

THE DUAL PARKING METER COMPANY

A subsidiary of The Union Metal Manufacturing Company

Canton 2, Ohio

OVER 20 YEARS OF KNOW-HOW . . . OVER 800 CITIES *Know* WE KNOW HOW

there's a reason

why

PARK-O-METER

is the choice of the most important cities in America and why alert officials in hundreds of smaller places have installed Park-O-Meters. Proved dependability is one reason; superior performance is another . . . but there are many more . . . and they concern *you and your city*

in fact,
there are
exactly
39 REASONS
ask us to name them!

Magic-Fair
PARK-O-METER COMPANY

Successful Parking Program in Norwood, Ohio

By R. EDWARD TEPE*
Mayor
Norwood, Ohio

THE PARKING NEEDS of Norwood, Ohio, (population 38,000) were complicated by high industrial employment, active retail and service traffic, and a compact residential area. Here is how our safety, engineering, and traffic specialists handled the problem:

1. Provision of off-street municipal facilities designed to eliminate parking on already jammed streets and to provide adequate reasonably-timed facilities for shopping and business transactions.

2. Utilization of metered parking on as many available streets contiguous to centers where park-and-walk accommodations could be offered as a public convenience.

Parkers Have Preference

The off-street parking accommodations include a municipal parking lot, maintained in fortunately-obtainable grounds at the rear of retail establishments in the heart of the business section providing parking for 364 motor vehicles. All-day parkers prefer this unit as well as a "fringe" metered lot several minutes from the heart of the city.

The municipal parking lots have —with the encouragement of business firms supplying their own facilities for own-use parking of trucks and personnel vehicles—resulted in a practical easement of congestion. On a recent Saturday, a heavy business day in Norwood, a spot check revealed 17 spaces open on the metered streets in the shopping district.

Revenue from the sixty 10-cent Parkit-Lockit street-parking meters, as well as from other Karpark meters, over a six-weeks' period averaged $1.60 per meter per week or 27 cents per day.

On the municipal parking lot and streets adjacent, Parkit-Lockit meters are installed. Meters on the lot are currently averaging daily $22 per stall; those on the street $34 per stall. With Parkit-Lockit meters which have no timing mechanism, the parker drops the coin into the meter when entering the space on a sort of "Honor System" basis. The coin compartment of the meter is so constructed as to permit the traffic patrolman to make a quick "spot check" to determine whether the parker has "paid" or is "stealing a space." Mechanical performance of Parkit-Lockit has been excellent.

*Editor's Note: Mayor Tepe, who has served as Vice-Chairman of the Ohio League of Municipalities and is a member of the U. S. Conference of Mayors, spearheaded this program to provide adequate parking in his city.

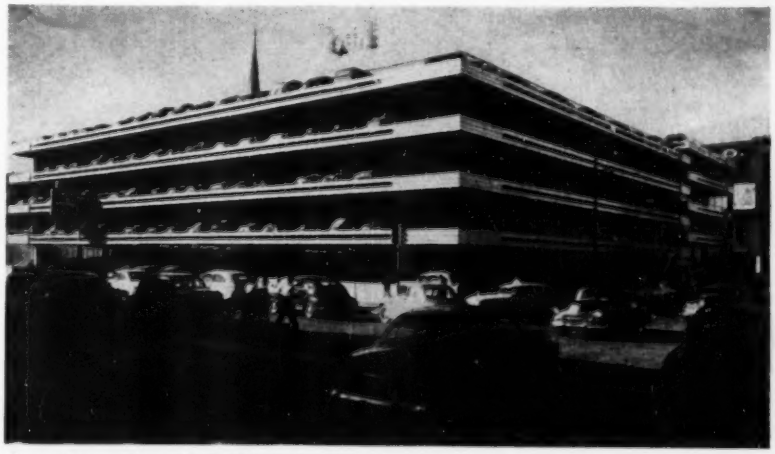
Norwood's 64-car municipal lot attended by Parkit-Lockit meters.

Two New Private Parking Garages in Minneapolis

DOWNTOWN property owners and businessmen thought they could do better than the $4,000,000 parking-garage program proposed by the Minneapolis City Council in 1949 so they organized Downtown Auto Park, Inc.

Sites were selected and bought for two garages. Plans were drawn specifying the "Smooth Ceilings" System, invented by Walter H. Wheeler, Minneapolis consulting engineer, which eliminated column capitals, beams, drop panels or bearing columns along the exterior walls.

The first garage was started December 4, 1950. It has six levels and will hold 520 cars at an estimated cost of $1,000 per car space, including mechanical equipment. The second, a larger structure with seven levels, holds 820 cars at a cost of $962 per car space, all mechanical equipment installed. Larson & McLaren of Minneapolis and D. L. Briegel & Associates of Detroit were the associated architects and engineers of the project; the builders were the H. N. Leighton Company and Kraus-Anderson, Inc., both which are located in Minneapolis.



One of two "Smooth Ceilings" Systems flat-slab garages owned by Downtown Auto Park, Inc., of Minneapolis. It has a capacity for 820 cars on seven parking levels (two below ground).

Dress up your skyline

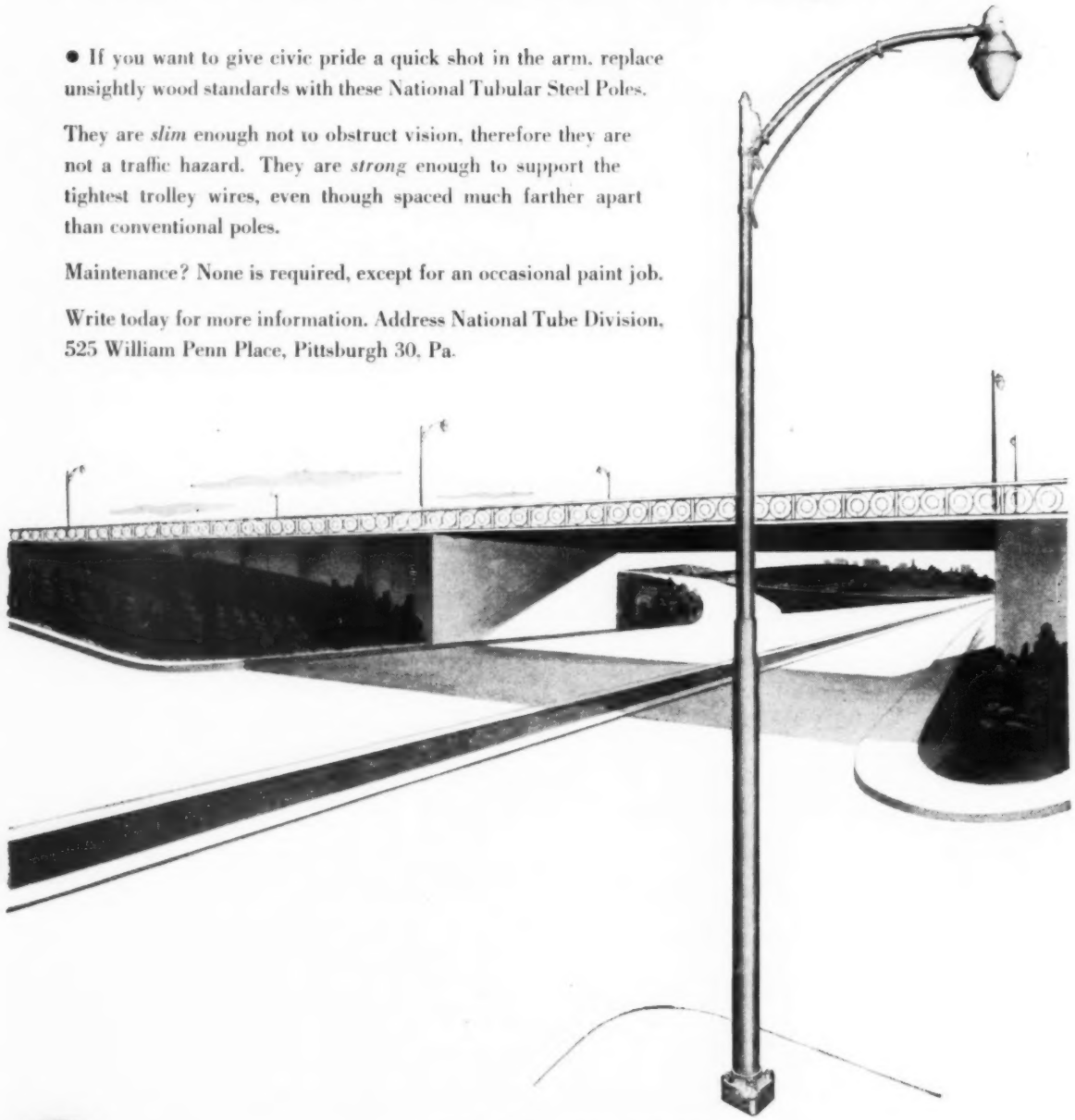
with these smooth steel poles

• If you want to give civic pride a quick shot in the arm, replace unsightly wood standards with these National Tubular Steel Poles.

They are *slim* enough not to obstruct vision, therefore they are not a traffic hazard. They are *strong* enough to support the tightest trolley wires, even though spaced much farther apart than conventional poles.

Maintenance? None is required, except for an occasional paint job.

Write today for more information. Address National Tube Division, 525 William Penn Place, Pittsburgh 30, Pa.



NATIONAL TUBE DIVISION

UNITED STATES STEEL CORPORATION, PITTSBURGH, PA.

COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS • UNITED STATES STEEL EXPORT COMPANY, NEW YORK

U·S·S NATIONAL *Tubular* STEEL POLES

UNITED STATES STEEL

City Transit Can Thrive Again

By COLONEL S. H. BINGHAM
Chairman
Board of Transportation
New York, N. Y.

THE TOTAL NUMBER of city-transit rides was almost the same in both 1926 and 1950—just about 17,500,000,000 in each year. But during the period between those years the urban population—the potential riders—grew by more than one-third, from 63,000,000 to over 88,000,000.

Congestion Is Impeding Cities

This relative decline in the number of transit riders—despite the technological progress made by the industry—is not a phenomenon occurring in a vacuum, of interest only to a few economic historians. It is a phenomenon that vitally affects everyone of you who has a financial stake in the life of any city, and every city in the world. It is important to you because the decline in per capita transit rides represents a shift of riders from mass-transit vehicles to private cars on such a scale that the resulting traffic congestion is seriously impeding our cities.

I maintain that the best way now known for any city to ease its traffic problem, and to stem the flight of business and population to the outskirts which creates so many civic problems, is to strengthen its local transportation system.

Our cities have developed as a result of people's living and working in one area for many years. They are the centers of our industry and government and the repositories of our culture. As such, they have a tremendous inertia, and change slowly.

What Are Streets For?

To aid any mass-transit system we must go back to fundamentals. What are streets for? Are they outdoor parking garages or are they routes for the movement of people and goods from one place to another? It is imperative that these streets be restored to the intended function.

I am convinced that unless we restrict the flood of unessential private cars in our streets, free the streets of parked cars, and permit transit vehicles to move quickly, we are going to see a depression of real-estate values in the central parts of our cities. Only a freely moving mass-transportation system can move enough people in the downtown areas to discourage the growth of peripheral shopping and business areas. Downtown areas provide a large portion of municipal revenues. Their destruction results in little decrease of municipal financial needs.

Some five years ago I looked at some experiments which were going on in England on the gas-turbine engine. We in this country knew of the gas turbine as an engine for airplanes and for heavy stationary installations. Nothing was being done here about adapting it for automotive engines. Last year I was still urging consideration of this engine and suggesting that perhaps another five years would bring it into general use. I was no longer alone, however. Others were developing the same enthusiasm. This year we may be even closer. For those of you who have not as yet heard why the gas-turbine engine shows so much promise, I will point out briefly that—

- It gives equal horsepower with one-seventh the weight of a reciprocating engine. And the weight per horsepower may be reduced even further.
- No liquid cooling system is required.
- It has very few moving parts. Consequently, it is cheaper to manufacture and cheaper to maintain. It can burn very low-grade fuels—a saving in operating costs.

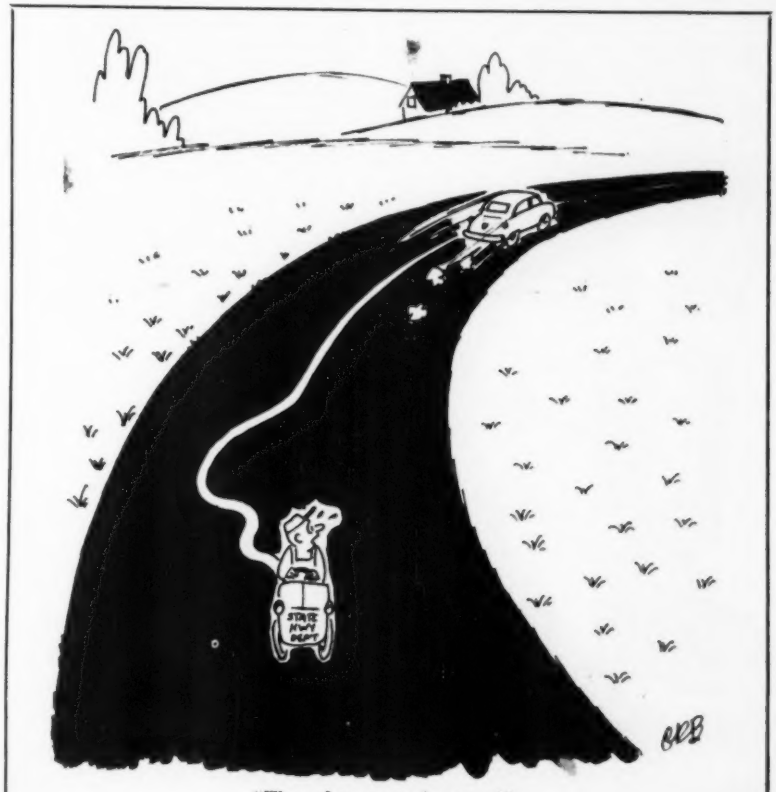
The economic advantages of this engine are particularly important to city transit because capital funds are increasingly difficult to get and because labor and material costs have risen so high that increased efficiency and economy have become essential.

We have just scratched the surface of the application of electronic devices to transit. In the New York City Transit System we are now working on an automatic electronic train-identification device. When fully developed, this will be able to establish the route of a train by setting the switches and signals, and record the passage of the train on appropriate recording instruments, and if desired, activate a loud speaker or other type of train-announcing system to let passengers know the train route and destination.

It will also be possible to report the identification and time of passage of buses at any place along the route. This will permit more accurate scheduling and better control over bus operations without the expense of more supervisors on the streets, and will result in better service to the public.

These are but three of the many developments now under way. Given the opportunity, the transit industry will apply all modern scientific and engineering improvements and continue to furnish an essential service more and more efficiently.

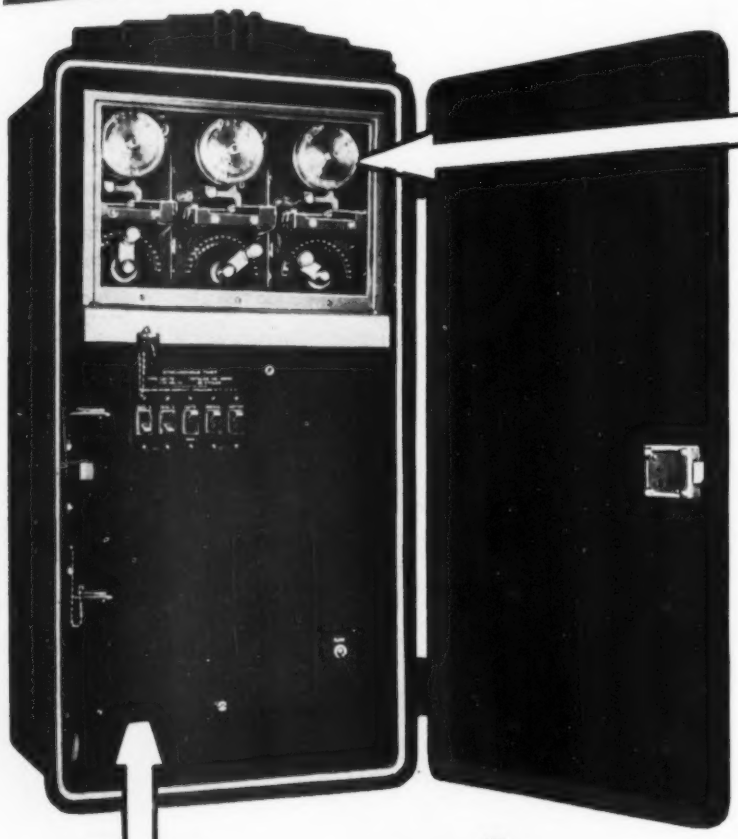
The difficulties facing our cities—and the transit industry, as an essential element in city life—are basically social and political in nature. We have the facts and the experience to solve our problems. What we need for real progress is agreement on the goals, and the determination to go ahead towards these goals.

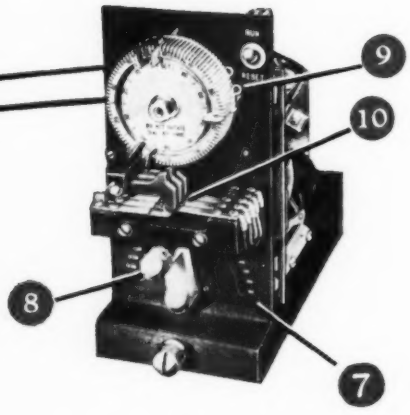


"Wow, that was a close one!"

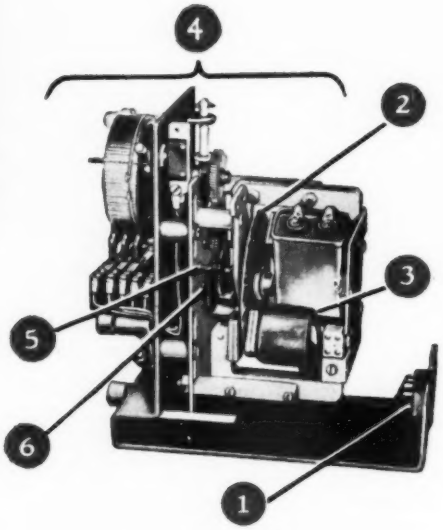
IT'S NEW

You get greater flexibility with CROUSE-HINDS

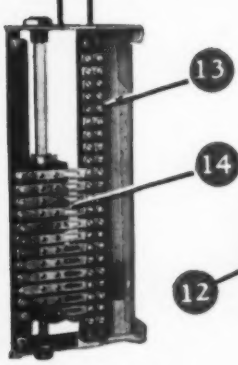




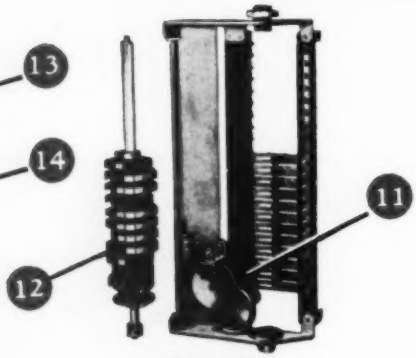
Dial-Unit
Enlarged Front View



Dial-Unit
Enlarged Side View



Cam-Unit
Right Side



Cam-Unit
Cam Shaft Removed
Left Side

CONDULETS · TRAFFIC SIGNALS

Type LS Synchronous Controller

It provides for future growth

At any location where a single-dial controller is adequate today, but where a more complex controller may be required in the future, the Crouse-Hinds Type LS Synchronous Controller makes an ideal installation. It can be supplied for non-interconnected, future-interconnected, or interconnected operation.

The Crouse-Hinds Type LS Synchronous Controller differs in its basic construction from controllers of conventional design. In the Type LS Controller, each timing-dial with its driving motor is constructed as an individual unit. All dial-units are jack-mounted to the controller assembly, and may be quickly and easily removed.

The Type LS Controller can be supplied with 1, 2, or 3 dial-units. Each dial-unit can be set for a different time-cycle, a different timing-split and a different offset. All controllers have provision for three dial-units regardless of the number of units initially purchased. Therefore, the Type LS Controller is ideal where a single-dial controller is sufficient at the time of installation, but where future needs may call for additional dials.

The Type LS Controller may be purchased with 1, 2, or 3 resets on each dial-unit. When shipped from the factory, all dial-units are wired for 3 resets. Reset 2 and reset 3 may be added in the field to single-reset dial-units by simply installing dial contacts and switch arms. It's as easy as that!

Important Features of the Dial Unit

1. Jack-mounted quickly-removable from the controller assembly.
2. Disc-type synchronous motors provide high-torque with proven reliability.
3. Electro-dynamic braking assures accurate maintenance of offset.
4. All parts readily accessible for inspection and maintenance.
5. Heavy-duty bearings used throughout.
6. Long-wearing, precision-cut reduction gearing.
7. Full-length visual scale shows time-cycle in use.
8. Latch-in gear shift assures exact engagement with dial gear.
9. Precision dial with retaining ring—timing keys are locked in position.
10. Dial-contact assembly especially designed for easy maintenance.

Important Features of the Cam Unit

11. Motor-driven for greater flexibility, smoother operation, and longer life.
12. Replaceable cam lobes assure unequalled color sequence and interval flexibility.
13. Fifteen circuits wired complete.
14. Heavy-duty color-circuit contacts rated at 10 amperes, 115 volts.

The Type LS Controller is built to Crouse-Hinds high standard of quality from the finest materials by skilled workers. It will solve many of your traffic problems.

CROUSE-HINDS COMPANY
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AIRPORT LIGHTING · FLOODLIGHTS

Getting Good City Government—and Keeping It

By THOMAS H. REED
Municipal Consultant

WHAT ARE THE QUALITIES of a good city government? In the first place, it must be representative. This means much more than that the people have a right to participate in the choice of its governing authorities. It means that they must participate effectively in the unbossed choice of those authorities. Good city government must be honest and efficient so that the people may get a hundred cents of return for every tax dollar. I have coupled honesty with efficiency because there is no more thoroughly exposed fraud than the notion that a dishonest government can be efficient except in lining the pockets of its bosses. I have not said "economical" because that term is often abused to mean parsimonious, and city governments exist to render service, not to save money but to spend it wisely in the public interest. No government, moreover, can be called efficient which is extravagant or wastes the people's money on unworthy objects.

Essential Municipal Facilities and Services

A good city government preserves peace and order and protects the public from the encroachments of vice. It enforces law without fear or favor, and does not by partial enforcement of vice regulations intended to curb the criminal and the vicious enhance the opportunities of racketeers and gangsters.

A good city government provides effective fire protection, collects refuse frequently and disposes of it with a minimum of nuisance, provides adequate facilities for the collection and disposal of sewage, and requires all inhabitants to make use of these facilities. It provides or insures the provision of a sufficient supply of water that is safe to drink and suitable to use for all domestic and most industrial purposes. It provides or regulates satisfactorily the supply of gas, electricity, and transportation facilities.

A good city government makes provision for an up-to-date public-school system for all its children, library facilities for all classes of its population, and a recreational system to foster the health and fill the leisure time of all ages.

A good city government protects the public health by the use of every resource of modern science, controlling contagion, protecting the purity of food and drink, furnishing health education, and conducting special campaigns against the ravages of tuberculosis, infantile paralysis, cancer, heart disease, and other scourges. At the same time it provides hospitals to the full extent needed to supplement what is done by private beneficence, and sees to it that the poorest of its inhabitants has, when they are needed, the best medical and hospital services.

A good city government cares for the poor and needy, encourages private charity, but lays an iron hand on those who in the name of charity seek to defraud the public, and in its own charitable enterprises makes use of the most enlightened methods of social service and regeneration.

Good city government makes long-range plans for the growth and development of the city, buttressed by sound zoning regulations, so that it may not strangle to death on its own traffic, and so that every portion of its site shall be used most advantageously and that their due portion of light and air may be assured to all its people.

This catalog could be extended into many other fields of activity. But I have said enough to establish the fact that a good city government is of almost incalculable value to its citizens. . . .

The council-manager plan of government is intended to bring into the service of the city a group of expert administrators headed by an expert city manager. . . . The manager reports to the council and the council reports to the people. But no council by itself can guarantee to give the experts the support they need for a fair opportunity to show what they can do. Behind the council there must be an organization of citizens capable of winning elections. . . . The possession of a council sympathetic with the council-manager plan is essential to that plan's success. The continuous possession of such councils depends on the existence of a vigorous permanent citizen organization prepared to fight not in one but in every succeeding election. . . .

Rome Not Built in a Day

The realization that good government as well as liberty can be had only at the price of eternal vigilance is very disconcerting to some people. But you cannot build even a motor car or a factory and then neglect it, much less a structure made of human beings, like a government. We just have to face the fact that, while sound forms of government work better than unsound ones, you cannot in the long run get out of any form of government more than you put into it.

From an address before the National Conference on Government of the National Municipal League, at San Antonio, Texas, November 19, 1952. The full text of Dr. Reed's paper is available in the December issue of the *National Municipal Review* (299 Broadway, New York).

Dearborn Voters Set a Record

Dearborn's Mayor Orville L. Hubbard, left, and City Clerk Myron A. Stevens are shown accepting the Civic Achievement Award presented by Arnold J. Copeland, right, chairman of the Bay City Ballot Battalion. The plaque cites Dearborn for "attaining the Michigan voting record over 12 other cities in its population group." Dearborn citizens cast 53,584 votes out of a possible 61,482, with 87.2% of its registered voters going to the polls on November 4, 1952.

SIGNALS AHEAD
A11DL–U2
SPEED ZONE
A21DL–U2
AUTOFLOW
The Downlite Beacon, like all Autoflow traffic signal equipment, is built to provide maximum operational efficiency through simplicity. Designed and constructed in accordance with I.T.E. specifications and so that all parts are readily accessible for maintenance.
SOUTHERN Signals INC.
SHREVEPORT, LOUISIANA

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MODEL 804
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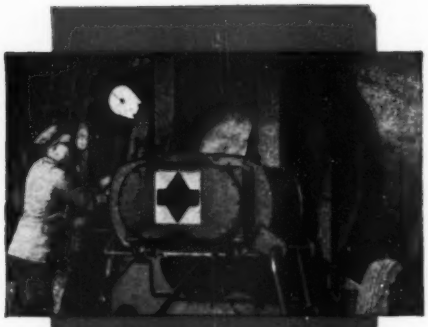
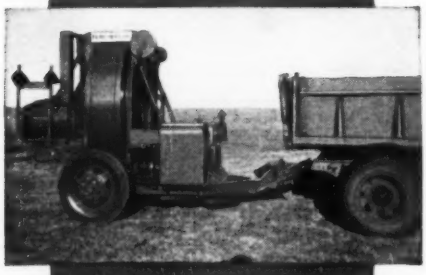
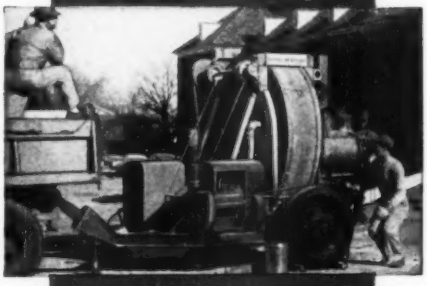


For parking lots, factory floors . . . on-the-job drying of aggregates, complete control of mix.



for playgrounds, tennis courts, roads and streets . . . scattered jobs . . . variations of mixes.



. . . THE NEW B-G Mixall

MIXES ALL THE HOT PATCH YOU NEED, ANY TIME, ANYWHERE, ANY WEATHER

Now, the new Barber-Greene Mixall gives you the opportunity to offer high quality bituminous paving for driveways, sidewalks, service stations, industrial plants, parking lots . . . and other "black top" jobs at new low costs.

The Mixall, a completely new, compact and portable small-job maintenance and paving mixer, will produce up to 5 t.p.h. of any type hot mix . . . up to 10 t.p.h. of cold mix . . . will produce low slump Portland cement mixes. Built to be towed behind the aggregate truck for on-the-spot mixing, the Mixall is just as well suited for central plant or stock pile operation. The Mixall can work in any weather . . . even drying frozen aggregates.

Think of what you could do with the new B-G Mixall in your territory. Then see the Mixall at your first opportunity . . . or write for full information.

THE ONLY SMALL JOB MAINTENANCE MIXER WITH...

- ROTARY DRUM DRYING: The same principle used in largest B-G Continuous Dryers.
- TWIN SHAFT HEATED PUGMILL: "Kneading" action assures even coating of every aggregate particle.
- POWER SKIP HOIST: Only 14" high for easy charging.
- HIGH DISCHARGE: Can discharge directly into place, into wheelbarrows or gas buggies.

Barber-Greene

Aurora, Illinois, U.S.A.

Report on Building Codes In New York Region

MOST COMMUNITIES in the New York Metropolitan Region are using outmoded building codes and many more have no building codes at all, according to "Building Code Progress," a bulletin published in December by the Regional Plan Association, in which the program of the New York State Building Code Commission for overcoming these deficiencies by creating an up-to-date performance-type building code is discussed in detail.

According to the RPA bulletin, municipal officials are increasingly impressed by evidence that higher insurance rates and rising local taxes tend to result from the twin hazards of unsafe buildings and disorderly development. Zoning in accordance with sound over-all planning is held to be one way of promoting sound development — building codes another. The important difference in function and purpose between the two types of legislation are discussed.

The findings of the Association's survey and of another one made by the New York State Building Code Commission show that although 70% of the cities, towns, and villages of the New Jersey–New York–Connecticut Metropolitan Region had building codes, fewer than half of these codes had been revised since their original adoption, which in some instances goes back to the period before the first World War. Cumbersome legal procedures and the expense involved in amending these ordinances have discouraged local legislators from keeping their codes up to date.

The program of the New York State Building Code Commission, as one answer to the problem, is then analyzed in detail in the bulletin. The New York State Code is a "performance-type" code, long advocated by experts in this field. Its provisions "define the objectives to be attained in building, without freezing into law the specific methods or means of attaining them. Adequate performance for the use intended by the material, system of assembly, or equipment is made the test of acceptability."

It is pointed out further that many recent advances in building methods, materials, and equipment are not now permitted by the older "specification-type" codes which are still used in most communities. Such codes specify within narrow limits the materials and methods that must be used and thereby tend to discourage the use of newer techniques in building.

The advantage of a performance-type code, according to the RPA report, is that it is considerably easier to keep up to date. No amendment is needed to authorize new methods or products, provided they meet the performance or functional requirements of the performance code. It is also to be anticipated that widespread adoption of the New York State Code will enable building-products manufacturers to achieve greater standardization and so to reduce their production and marketing costs, and to lower their prices.

The Regional Plan Association's report states that communities which accept the state code retain local control of its administration and enforcement and concludes: "The State of New York through its Building Code Commission is providing municipalities with building-code services of outstanding quality and extent. The great advantage of the state code to the municipalities derives from the facilities for code drafting, guidance, and research that are available under the program facilities which are feasible only on a state-wide basis."

In Connecticut, there is a state code based on the code of the Building Officials Conference of America as adopted for conditions in Connecticut. Work is also under way in the state on an abbreviated one- and two-family code for smaller communities.

New Jersey communities are reported to have less assistance in the promulgation of building codes. Work on a state code by volunteer committees has been under way for some time, but it is stated that progress has been slow because of lack of adequate funds. Meanwhile, a simplified specification-type code for one- and two-family dwellings is available.

Machine Saves Time and Money On Utility Billing for Auburn, Wash.

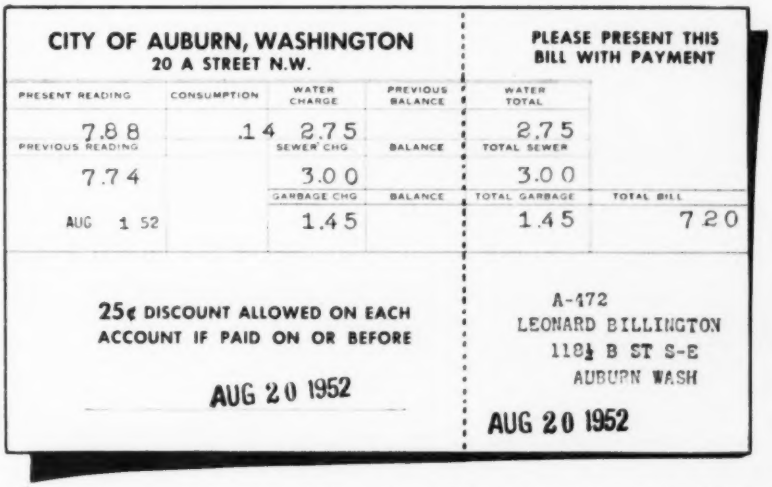
TWENTY-THREE HUNDRED utility accounts with three charges—water, sewer, and garbage—are billed and payments posted by the City Treasurer's office of Auburn, Wash. The population of this city is 6,500—54% greater than in 1940. Until July 1, 1952, when we installed an Underwood Sundstrand accounting machine, bills and receipts were written by hand. The office had reached the "saturation" point in the number of accounts (2,300) that we could handle manually without employment of additional help.

We were using a separate water ledger, sewer ledger, and garbage ledger. When a customer paid a bill at the counter, the cashier took from each of the three ledgers the amounts due, added them, and received payment. Only one person at a time could be taken care of. Later, the payments were posted to the three ledgers by pen and ink.

With the accounting machine, all three accounts are kept on a single-unit ledger card. Payments are posted to each service account on the card. Automatic totals are obtained of the daily postings of receipts for each service as well as a combined total. An accurate figure for water consumption is obtained for the Water Superintendent for each of the three billing districts.

The new system is saving time and payroll expense, and the combined ledger cards, good for three years, are less expensive than the separate ledgers.

MRS. JUNE C. TAYLOR
City Treasurer
Auburn, Wash.



CITY OF AUBURN, WASHINGTON
20 A STREET N.W.

PLEASE PRESENT THIS BILL WITH PAYMENT

PRESENT READING	CONSUMPTION	WATER CHARGE	PREVIOUS BALANCE	WATER TOTAL	
7.88	.14	2.75		2.75	
PREVIOUS READING		SEWER CHG	BALANCE	TOTAL SEWER	
7.74		3.00		3.00	
		GARBAGE CHG	BALANCE	TOTAL GARBAGE	TOTAL BILL
AUG 1 52		1.45		1.45	7.20

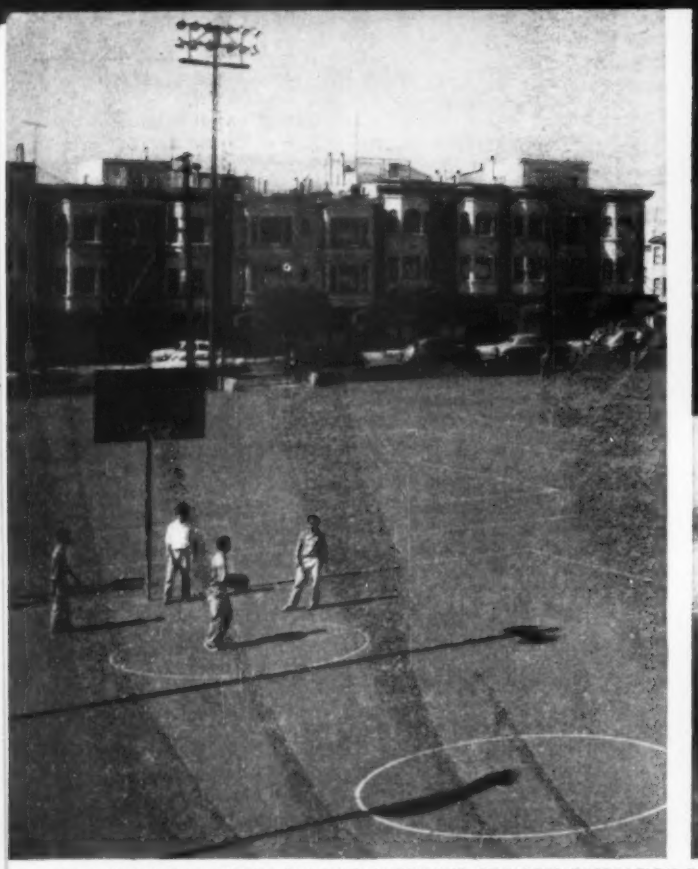
25¢ DISCOUNT ALLOWED ON EACH ACCOUNT IF PAID ON OR BEFORE

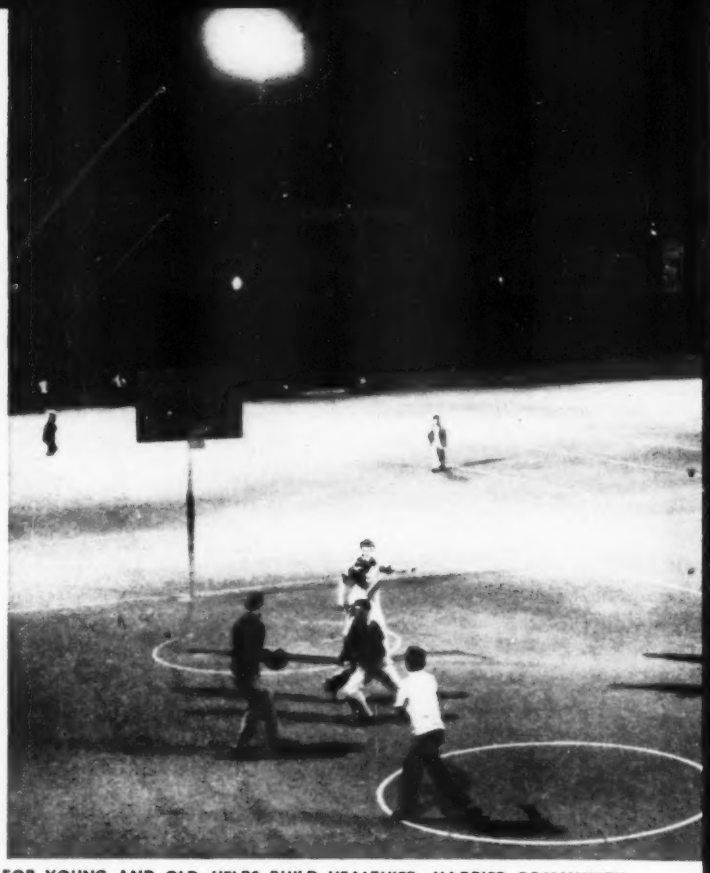
AUG 20 1952

A-472
LEONARD BILLINGTON
118½ B ST S-E
AUBURN WASH

AUG 20 1952

One machine operation writes all the combined bills—water, sewage, and garbage—included in the postcard form shown.





DAY AND NIGHT, NORTH BEACH PLAYGROUND PROVIDES RECREATION FOR YOUNG AND OLD, HELPS BUILD HEALTHIER, HAPPIER COMMUNITY

Lighting raises playground attendance 50%

G-E LIGHTING EXTENDS PLAY HOURS AT SAN FRANCISCO RECREATION AREA

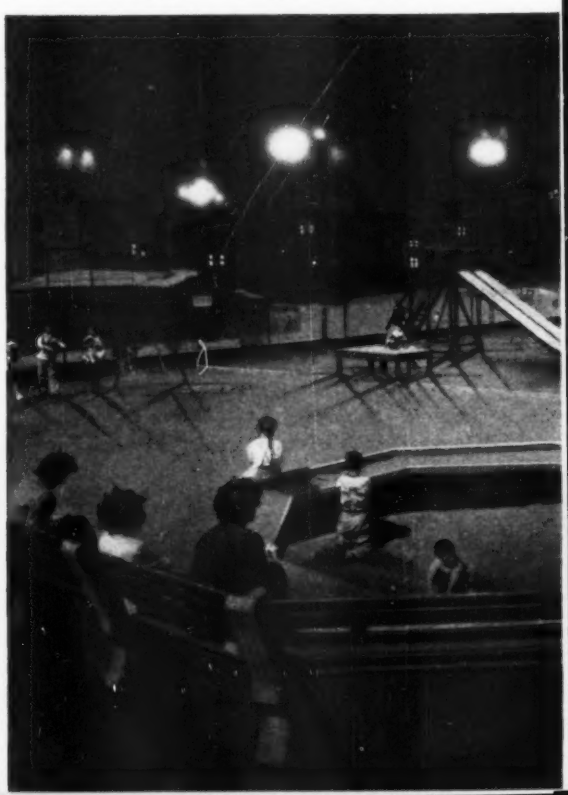
At North Beach Playground, San Francisco, Calif., attendance jumped from 175,000 to 265,000 a year after installing G-E floodlighting.

"These lights are a big asset to the community," says Miss J. LeNoir, one of the two Playground Directors. "They give people a chance to relax and play, and they definitely help reduce crime and accidents."

If you'd like *your* community to enjoy similar benefits, you'll find help in G.E.'s booklet, "Recreation is Everybody's Business" and documentary film "A Chance to Play." Address *Section 451-177, General Electric Co., Schenectady 5, N. Y.*

GENERAL ELECTRIC

PARENTS RELAX, particularly on warm nights when children get restless, as G-E lighting provides longer play periods. Playground is open until 10 p.m.



OFF THE STREETS, these boys play evening baseball in safety. Says Mr. H. Ong, the other of the two Playground Directors, "In the evening it's especially dangerous for boys and girls to roam the streets. These lights are a blessing."

New Jersey League Asks More State Aid for Municipalities

CONTINUING and more militant attention to the problem of securing adequate state aid to municipalities, especially for street improvements and educational purposes, was the dominant keynote of the well-attended thirty-seventh annual conference of the New Jersey State League of Municipalities at Atlantic City, November 18-21. Increasing resentment on the part of many community leaders at the state's "penny wise and pound foolish" tax policies, meager services, and inequitable distribution of state-aid funds—causing unduly heavy tax burdens on local property owners—was apparent at the meeting and in the tenor of the resolutions adopted. This resentment was coupled with demands from some municipalities for some formula for state compensation for loss of municipal revenues created by demolition of structures for toll highways such as the New Jersey Turnpike and the projected $285,000,000 Garden State Parkway, due for completion in 1955.

A Conference Highlight

One of the important highlights of the conference was a combined meeting of the New Jersey Institute of Municipal Attorneys, the Building Officials Association of New Jersey, the New Jersey Association of Housing Authorties, and the New Jersey Federation of Official Planning Boards. This meeting had considerable educational value in acquainting the four groups of officials with some of each other's common problems and their interrelationships. Among subjects discussed at the meeting were: "The Role of the Building Inspector as a Zoning and Planning Enforcement Officer," "The Proper Relationship Between the Building Code and Zoning Ordinances," "The Proposed Revision of the State Planning Act," and "Federal Requirements for Planning and Urban Redevelopment Assistance"—the latter being covered by Carl Feiss, Chief of the Planning and Engineering Branch of the Division of Slum Clearance and Urban Redevelopment, at Washington, D. C.

Affiliate Organizations Also Meet

Other organizations affiliated with the League who also met at the time of the conference included: Association of Municipal Assessors, Municipal Clerks' Association, Municipal Electrical Inspectors' Association, Association of Municipal Engineers, Municipal Finance Officers' Association, Health Officers Association, Municipal Receivers and Tax Collectors Association, Public Recreation Association, and Municipal Welfare Association.

New officers of the League are: President, Joseph Altman, Mayor, Atlantic City; First Vice-President, F. Roy Baxter, Commissioner, Phillipsburg; Second Vice-President, Chester W. Paulus, Commissioner, New Brunswick, and Third Vice-President, Ralph N. Bull, Mayor, Sparta Township.

La Guardia Award to Edward G. Conroy

THE DIRECTOR of the Bureau of Governmental Research of San Antonio, Texas, Edward G. Conroy, was the recipient on December 13 of the 1952 award of the LaGuardia Memorial Association. This citation for outstanding achievement in municipal affairs is given each year in memory of the former Mayor of New York.

The Crane that Everybody Wants

THE SANTA MONICA Water Department bought it, but the rest of the city's departments soon were borrowing its hydraulically operated crane.

W. W. Stephens, Water Superintendent, arranged for the purchase of the Bucyrus-Erie Hydrocrane, primarily to load, unload, stock-pile, and lay water mains. For pipe handling, the Water Department previously used an A-frame mounted on a truck. This could not be rotated so the truck had to be backed and moved in order to get the crane into position for working. The new Hydrocrane has done away with all of this waste motion and has put the work on a much more efficient basis.

Avoids Public Complaints

The compact size of the unit also is a great advantage. At one time, Mr. Stephen's crews faced a great deal of citizen opposition when they started laying water mains in certain portions of the city where trees and shrubbery are thick. With this new crane, however, the crews can operate in cramped quarters and create little or no damage either to the property or to the feelings of the residents.

At one location, shown in the accompaying photograph, the Water Department crews were unable to unload the pipe at the gutter line in the customary manner, so this crew hauled a trailer load of pipe, towed behind the Hydrocrane, and moved it from the trailer to the trench in one operation.

Rebuilds Piers, Sets Street Lamps

The city's Building Maintenance Department is a frequent borrower of the crane, and uses it to redeck piers belonging to the city, recap piling, and for other maintenance work of this nature.

The Street Lighting Department likes to use the machine also. Its crews find that the crane is very practical for setting lamp posts, especially since the lamp posts have to be handled carefully.

Water-main laying is much easier in Santa Monica, Calif., now that this compact truck train is used. It is able to work without damaging overhanging trees.

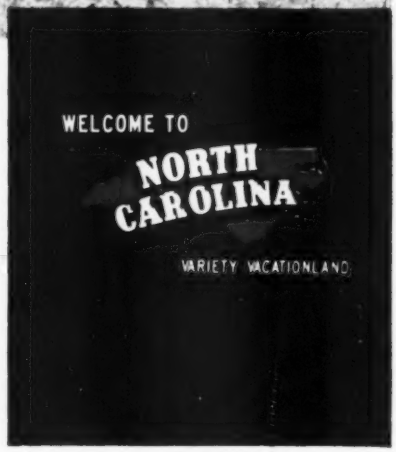
NORTH CAROLINA says a full-color Welcome with "SCOTCHLITE" BRAND REFLECTIVE SHEETING

REG. U. S. PAT. OFF.

STATE ENTRANCE SIGNS like this reflect a warm, friendly welcome to all who enter the state. They proclaim by their unmatched, radiant beauty the progressiveness and hospitality of the State Administration officials.

For this striking State Entrance sign program, North Carolina chose "SCOTCHLITE" Sheeting . . . for its *day and night* effectiveness; for its rugged, all-weather service.

Easy to maintain, these signs are smooth, self-cleaning. Best of all, they're easy to *see*, easy to identify, under all driving conditions. That's why states like North Carolina specify *color-keyed* signs of "SCOTCHLITE" Reflective Sheeting to complement today's high standards of highway engineering, landscape and design!



AFTER DARK, this state entrance sign reflects its friendly welcome in true color, true size, true shape.

MINNESOTA MINING & MFG. CO.
Dept. AC-13, St. Paul 6, Minn.

SEND TODAY for comprehensive presentation on costs, materials and methods for making *color-keyed* signs of "Scotchlite" Reflective Sheeting. No obligation, of course.

NAME .....

ADDRESS .....

CITY ..... ZONE .... STATE .....

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"SCOTCHLITE" BRAND REFLECTIVE SHEETING

Made in U.S.A. by Minn. Mining & Mfg. Co., St. Paul 6, Minn.—also makers of "Scotch" Brand Pressure-Sensitive Tapes, "Scotch" Sound Recording Tape, "Underseal" Rubberized Coating, "Safety-Walk" Non-slip Surfacing, "3M" Abrasives, "3M" Adhesives. General Export: 122 E. 42nd St., New York 17, N. Y. In Canada: London, Ont., Can.

3M COMPANY

Assessors Can Keep the Public Informed on Taxes

PROPERTY ASSESSORS have the best opportunity among local government officials for keeping the citizens informed about the whole problem of local taxation, according to Crowell D. Eddy, property assessor of San Diego County, Calif.

In an address to delegates at the recent 18th International Conference on Assessment Administration in Detroit, Mr. Eddy said that every newsworthy item regarding assessing should be published in enough detail to give taxpayers a sound conception of what the assessor is doing.

Assessor's Responsibility

It is the assessor's responsibility to bring such items to the attention of the press, Mr. Eddy declared. He also emphasized that a close scrutiny of the assessing office by the public could have the same effect upon assessment administration that televising of party conventions has had on party politics.

"Frank public relations can be the means of backing those reforms that you may have wanted to make for some time, but couldn't get the money for from your budget-making body. The bright light of public scrutiny has ushered in many a good reform," he asserted.

The assessor who does not maintain a friendly "open door" to the press is making a grave mistake, according to Mr. Eddy. "While you are not in a position to give detailed information regarding the affairs of a particular taxpayer for publication, there is a great deal that happens in your office that can be legitimately publicized," he said.

He mentioned subdivision activities, volume of exemptions, valuation trends, and related fiscal data as materials in the assessing office which could be used for newspaper stories.

Municipal Crossword Puzzle Solution

(*Puzzle on page* 123)

B	O	S	T	O	N			M	E	M	P	H	I	S
U	N	P	A	V	E	D		A	S	P	H	A	L	T
S	T	R	E	E	T	C	A	R		S	O	I	L	S
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D	A	R	E	R		S	L	U	M		E	T	O	N
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A	L	I	A	S		F	I	R	E	A	L	A	R	M
G	A	R	B	A	G	E		P	O	N	T	I	A	C
S	W	E	E	P	E	R			S	T	A	N	D	S

How to stop complaints about refuse collection!

Modern High-Speed PAX-ALL sells for as little as $2865.00

(less truck, tax and mounting)

F.O.B., Minneapolis, Minn.

(Price subject to change.)

Gives faster service at less cost per ton!

If your community has been struggling along with slow, inefficient refuse collection, it's high time you arrange for a *free demonstration* of the modern PAX-ALL system of automatic cram loading. Communities throughout the world have discovered that *one PAX-ALL does the work of 2 to 3 open trucks* . . . completes routes faster with less labor, fewer trips to the dump. What's more, PAX-ALL's fully enclosed, watertight body, with its low bucket loading, eliminates germ-laden drippings, offensive odors and blowing refuse . . . does away with lost time accidents due to high lifting, or men falling off trucks. Best of all, PAX-ALL *costs up to 20% less than other compaction-type loaders* . . . mounts on less expensive 84" C/A trucks . . . is far less costly to operate and maintain. Let us prove these important PAX-ALL advantages on your routes today. No obligation.

Mail this coupon for FREE *PAX-ALL DEMONSTRATION!* (No obligation)

ST. PAUL HYDRAULIC HOIST
Customer Service Dept.
36125 Main St., WAYNE, MICH.

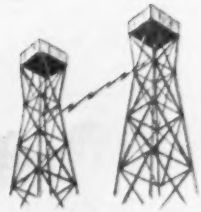
We are interested in PAX-ALL.
☐ Specifications ☐ Free demonstration

Name_____
Title_____
Address_____ State_____
City_____

S-PC-4

St. Paul HYDRAULIC

Refuse Loaders
Hoists and Dump Bodies
Truck Patrols



1922—First power line carrier current equipment installed.

1944—First application of frequency modulation to power line carrier current equipment.

1947—First microwave relay system in commercial operation.

1875—Elihu Thomson, one of the founders of General Electric, transmitted and received wireless signals for a distance of about a hundred feet.

1915—Sample radio-telephone transmitter installed on two U. S. battleships and used in 1916 Spring Naval Maneuvers.

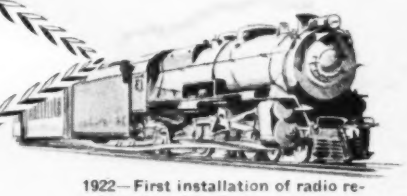
1931—Sonic locator developed for use by ships in fog. It was the first step toward radar.

1937—First application of radio communication aboard fireboats. New York City Fire Dept. installation.

1878 75 1953

YEARS OF ELECTRICAL PROGRESS

1923—First airmail plane radio communication equipment installed and tested.



1922—First installation of radio receiver aboard Pullman cars.

1927—First front-to-rear railroad communication equipment installed.

and today...

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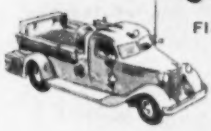
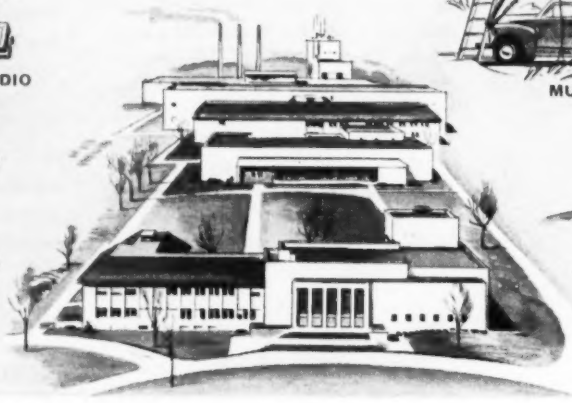
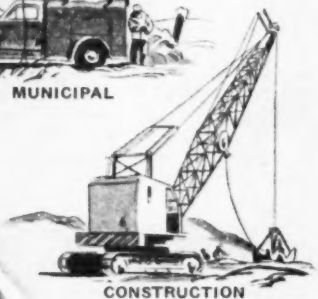
MUNICIPAL

POLICE



FIRE DEPTS.





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From the several companies formed to manufacture Edison's historic electric lamp, G.E. is today a company with 200,000 products . . . engaged in 13 of the 21 basic manufacturing industries. Its tremendous human and material resources are constantly working to give you a better life with new and improved products.

Communications in your business is the outgrowth of many G-E "firsts." Today — using G.E.'s *high-performance, low maintenance* radio units—industry, utilities, and municipal government reap these benefits: instant reliable communication for increased productivity . . area control . . . citizen protection.

For information write: *General Electric Company, Section 813-19, Electronics Park, Syracuse, New York.*

GENERAL ELECTRIC

THE MUNICIPAL BOND MARKET

A Roundup of Finance Talk At Three Recent Conventions

By CATHERINE CLARK
Municipal Service Department
Dun and Bradstreet, Inc.
New York, N. Y.

VARIOUS ASPECTS of municipal finance were examined thoughtfully by speakers at three recent conventions. What they said about planning and financing capital improvements, about conditions in the municipal bond market, is the subject of this column.

The National Municipal League held its Annual Conference on Government in San Antonio in the middle of November, and the next week the League of Texas Municipalities convened in Dallas. On November 30 the annual convention of the Investment Bankers Association of America opened in Hollywood, Fla. Among them, these conventions represented the viewpoints of the three groups concerned with municipal finance: administrators, investment bankers, and private citizens.

Consolidation

One of the speakers at the National Municipal League conference was particularly well qualified by his profession to understand all three points of view. He was William E. Davis, Jr., a municipal bond attorney of Houston. Mr. Davis, speaking on "Coordinated Capital Improvement Planning," examined the growth of metropolitan areas and the problem of financing capital improvements in such an area, which, though economically unified, is likely to be governmentally diversified.

Conceding that consolidation of these numerous taxing units is likely to be the most efficient means of solving metropolitan area problems, Mr. Davis recognized the difficulty of achieving such consolidation. He mentioned, however, three areas which have achieved it. *Denver*, which is a "city and county," has complete consolidation. *Atlanta* and *Fulton County, Ga.*, have re-allocated governmental functions to eliminate overlapping. The city, for example, furnishes water, sewage, police, fire protection, recreational and garbage-collection services; the county, public health, and welfare services. *Baton Rouge, La.*, is trying still another plan of city-county consolidation. In the city proper, where full services are rendered, one tax rate is in effect; in the surrounding industrial area, where fewer services are rendered, a somewhat lower rate obtains; and in the rural area, the lower level of services is reflected in a still lower rate.

In the absence of legal consolidation, Mr. Davis suggested that coordinated planning by the several taxing units could do much to provide an orderly and efficient capital-improvement program. In order to assure maximum citizen support, Mr. Davis proposed a three-committee organization: a policy committee, composed of distinguished citizens and a member from each of the taxing units involved; a research committee, composed of a member from each taxing unit and from each professionally staffed organization in the area; and a large representative committee, composed of a member from each organized group in the area. The research committee, using the facilities of official departments and the member organizations, would provide the factual data and analysis required for sound planning by the policy committee. The recommendations of the policy committee would be transmitted by the members of the representative committee to their organizations and the general public. Mr. Davis suggested that, through this machinery, plans initiated by the taxing units and citizen organizations could be coordinated into a five- to ten-year program to be re-examined and revised annually.

Bond Financing Programs

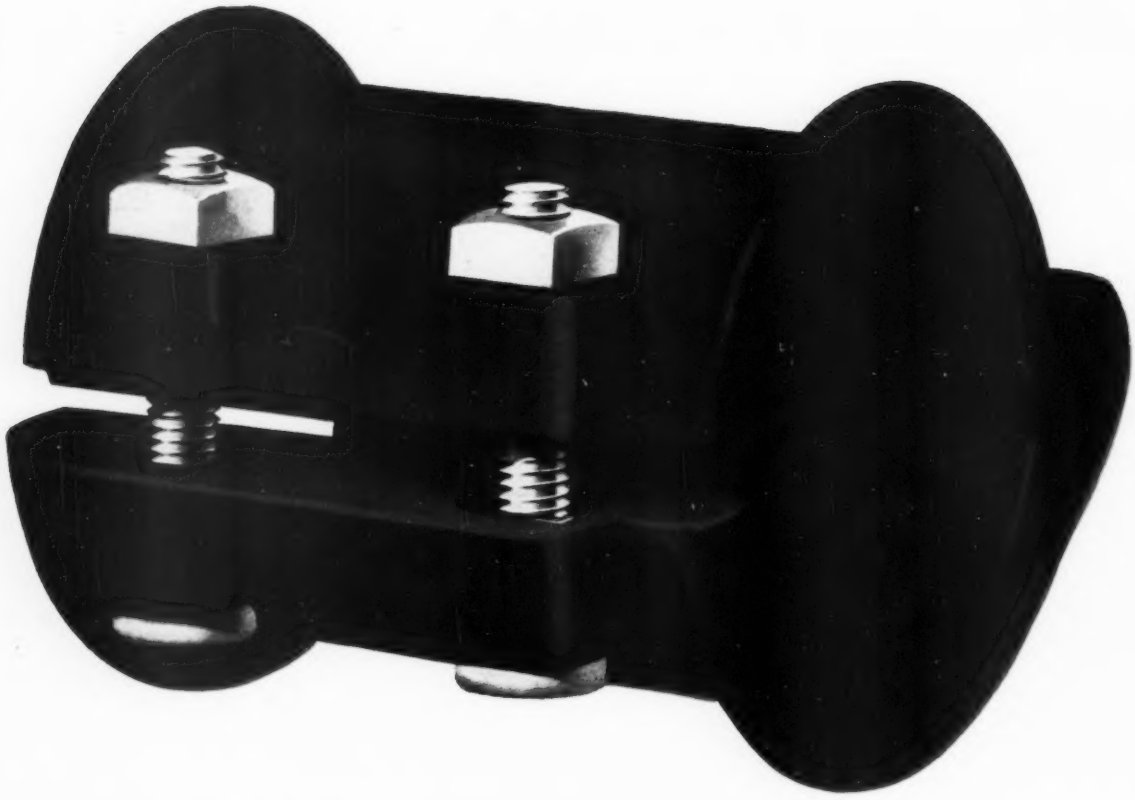
At the convention of the League of Texas Municipalities, E. Lynn Crossley, City Auditor of Dallas and President of the Municipal Finance Officers Association, also discussed long-range planning, with particular attention to financing. Though he conceded the value of planning, Mr. Crossley cautioned against presenting "comprehensive" programs of bond financing to the voters. Even the best planners often fail to qualify as economic prophets, and changed economic conditions may dictate revision of the most carefully worked out improvement program. Mr. Crossley suggested that a two-year program was about all that ought to be presented to the voters at a bond election. Many cities which, although they have long-unused bond authorizations on the books, are now seeking voter approval of bonds for more urgently needed projects, would probably say "Amen."

Speaking again at the convention of the League of Texas Municipalities, Mr. Davis discussed "The Effect of Tax Collection on Interest Rates." The point he made deserves recognition among city officials: bond buyers are likely to judge the efficiency of a city's administration by its record of property-tax collections. Whether such judgment is justified is beside the point; it is a fact. Mr. Davis illustrated his point by a comparison of the effective interest rates at which Dallas and Houston sold bond issues in 1946-52 with the "average" index of municipal bond yields (a composite of the *Bond Buyer* and Dow-Jones indexes). In relation to their population and taxable valuations, Dallas and Houston have about the same debt loads, but Dallas' tax-collection record has been substantially better than Houston's. Over the period studied, the net interest cost at which Dallas sold its bonds averaged 0.1954% less than the "national" average (that is, when the "national" index was 2.41%, Dallas was able to sell bonds at approximately 2.21% net interest cost). On the other hand, the interest cost on Houston's bond sales exceeded the "national" average by 0.1732%. The effective difference between the two cities averaged 0.3692%, which is a substantial one between cities where most security factors are comparable.

Speakers at the Investment Bankers' convention stressed the problems created for underwriters by the present tremendous volume of financing and the development of new types of municipal securities. Chief among the problems is finding buyers for the greatly increased volume of bonds and as more than one speaker pointed out, higher yields are among the most effective ways of attracting new investors. That idea is not particularly reassuring to cities which will sell bonds in 1953, but they would be wise to take it into consideration.

A Unique Observance

A UNIQUE city observance, but one which can well be duplicated elsewhere, provided the situation is "right," was the program sponsored by the Chamber of Commerce in Daytona Beach, Fla., titled "What's Right with Daytona Beach Week." Signs were displayed throughout the city stating: "We Love Daytona Beach."



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During the present critical shortage of pipe, nothing compares with these clamps for repairing corrosion leaks and splits in services as well as mains—for all sizes of steel and cast iron pipe, ½" to 12". These clamps, constantly improved over the years, have been serving the industry for over half a century. In stock, all oil supply stores.

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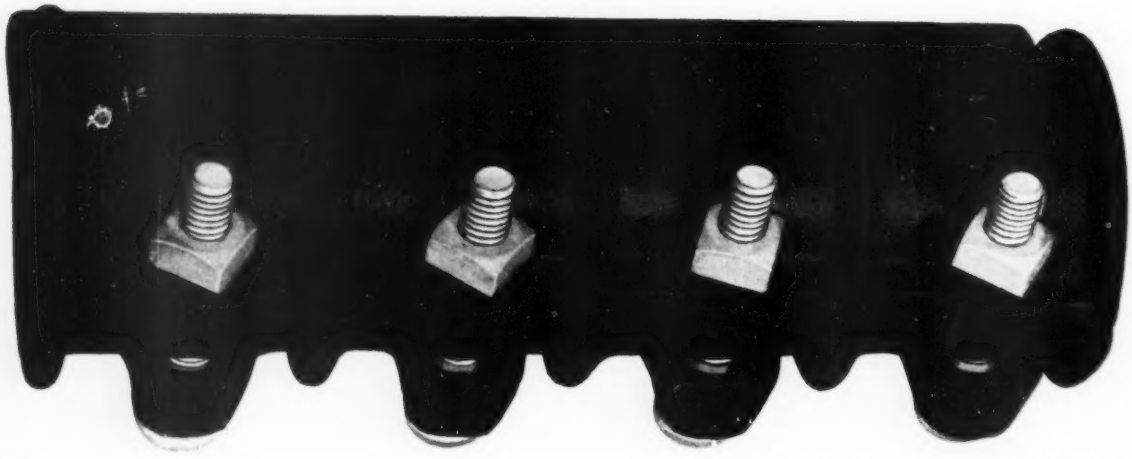
ESTABLISHED 1898
SOUTH BEND 21, INDIANA, U.S.A.



GRADING — The traction and digging power of the Model HM "PAYLOADER" easily cuts grade on this street paving job in spite of the many tree roots encountered.

SNOW REMOVAL — Loading snow with the bucket, or plowing it with "V" plow or one-way plow attachments the "PAYLOADER" is a versatile, powerful snow fighter.

LOADING — Full operator visibility and power-boosted steering makes the "PAYLOADER" a fast, nimble machine for loading trucks even in busy streets and other confined areas.

PITS & STOCKPILES — Whether stripping overburden, digging, loading or stockpiling, you can depend on the power and traction of 4-wheel drive "PAYLOADERS" to do a fast, efficient job.

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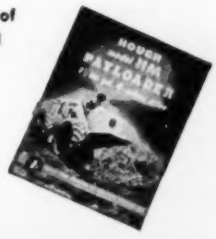
Four-wheel drive "PAYLOADER" tractor-shovels are capable *and* versatile — able to do *many* street, road, pit, stockpile and yard operations. They drive quickly to the job at speeds up to 17 m.p.h. Big tires, plus 4-wheel-drive, gives them catlike traction and flotation on sand, snow and mud. Power-boosted steering makes them maneuverable and easy to handle . . . four gear ratios in each direction provide the right speeds to fit each task.

4-wheel-drive "PAYLOADER'S" are available in 1½ and 1 cu. yd. sizes. Five other "PAYLOADERS" from 1¼ cu. yd. down to 12 cu. ft. capacity, including rear wheel and front wheel drive types, are available to meet every tractor-shovel need. Your Hough Distributor, one of 200 in the U.S. and Canada, is set up to serve you *right* — with extensive application experience and complete parts and service facilities. The Frank G. Hough Co., 710 Sunnyside Ave., Libertyville, Ill.

WRITE for full information on any of the "PAYLOADER" models: Four-Wheel Drive HM — 1½ yd. and HR — 1 yd.; Rear Wheel Drive Models HY — 1¼ yd., HF — ¾ yd., HE — ½ yd.; Front wheel drive Models HAH — 15 cu. ft., HA — 12 cu. ft.



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L-M Sewer Pipe

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Check these durability features

L-M Fibre Pipe is low in absorption, high in strength; resists soil acids, sewage salts, alkali, etc. Made of indestructible cellulose fibres and everlasting coal tar pitch. Toxic to roots.

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Friction-weld at joint is then produced by tapping.

The work progresses swiftly; only one man needed.

Adaptors and fittings for connection to other types.

Conventions—When and Where

Conventions listed this month for the first time are indicated by an asterisk (*)

Jan. 13-16—Washington, D. C.
HIGHWAY RESEARCH BOARD OF THE NATIONAL RESEARCH COUNCIL. Annual Meeting (National Academy of Science Bldg.). Fred Burggraf, Director, 2101 Constitution Ave. NW., Washington, D. C.

Jan. 20—New York, N. Y.
AMERICAN WATER WORKS ASSOCIATION—New York Section. Annual Winter Luncheon Meeting (Park Sheraton Hotel). Sec.-Treas., R. K. Blanchard, 50 W. 50th St., New York, N. Y.

Jan. 22-23—New York, N. Y.
NEW YORK STATE SEWAGE AND INDUSTRIAL WASTES ASSOCIATION. Annual Convention (Hotel New Yorker). Exec. Sec., R. C. Sweeney, 21 North Broadway, White Plains, N. Y.

Jan. 26-28—Atlanta, Ga.
AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS. Annual Meeting (Atlanta Biltmore Hotel). Corres. Sec., Bradford Williams, 9 Park St., Boston, Mass.

Jan. 26-28—Houston, Texas
ASSOCIATION OF ASPHALT PAVING TECHNOLOGISTS. Annual Meeting (Rice Hotel). Sec.-Treas., Ward K. Parr, Box 376, Ann Arbor, Mich.

Feb. 1-5—Chicago, Ill.
ASSOCIATED EQUIPMENT DISTRIBUTORS. Annual Meeting (Conrad Hilton Hotel). Exec. Sec., P. D. Hermann, 30 E. Cedar St., Chicago 11, Ill.

***Feb. 2-4—Atlanta, Ga.**
QUALITY CONCRETE SHORT COURSE. (Georgia Institute of Technology). Address all inquiries to C. H. Taylor, Coordinator, Short Courses and Conferences, Engineering Extension Division, Georgia Institute of Technology, Atlanta, Ga.

Feb. 2-6—New York, N. Y.
STATE ASSOCIATION OF TOWNS. Annual Meeting (Hotel Statler). Exec. Sec., Edward F. N. Uthe, 87 State St., Albany, N. Y.

***Feb. 4-6—Berkeley, Calif.**
INSTITUTE OF TRANSPORTATION AND TRAFFIC ENGINEERING. California Street and Highway Conference (University of California). Chairman, Raymond Archibald, Chief of the Highway Research Board Branch, U. S. Bureau of Public Roads, Washington, D. C.

Feb. 5-6—Indianapolis, Ind.
AIR POLLUTION CONTROL ASSOCIATION—East Central Section. Exec. Sec., Robert T. Griebling, 4400 Fifth Ave., Pittsburgh 13, Pa.

Feb. 9-11—Boston, Mass.
AMERICAN ROAD BUILDERS ASSOCIATION. Annual Meeting (Hotel Statler). Exec. Vice-Pres., Lt. Gen. Eugene Reybold, International Building, Washington 4, D. C.

Feb. 11-13—Indianapolis, Ind.
AMERICAN WATER WORKS ASSOCIATION—Indiana Section. Annual Meeting (Lincoln Hotel). Sec., George G. Fassnacht, 1330 W. Michigan St., Indianapolis 7, Ind.

Feb. 19-20—Columbus, Ohio
OHIO WATER CLINIC. Annual Meeting (Ohio State University). For information, write to Kenneth W. Cosens, Associate Professor, Dept. of Civil Engineering, The Ohio State University, Columbus, Ohio.

Feb. 20-28—Montevideo, Uruguay
INTERAMERICAN ORGANIZATION OF INTERMUNICIPAL COOPERATION. Inter-American Congress of Municipalities. For information write Mayor deLesseps S. Morrison, City Hall, New Orleans, La.

Feb. 26-28—Dallas, Texas
AMERICAN CONCRETE PIPE ASSOCIATION. Annual Meeting (Baker Hotel). Managing Director, Howard F. Peckworth, 228 N. LaSalle St., Chicago 1, Ill.

March 1-3—Atlanta, Ga.
SOUTHERN SAFETY CONFERENCE. Annual Conference and Exposition (Hotel Atlanta Biltmore). For further information contact Exec. Dir., W. L. Groth, P. O. Box 8927, Richmond 25, Va.

March 4-6—Atlantic City, N. J.
NEW JERSEY MOSQUITO EXTERMINATION ASSOCIATION. Annual Meeting (Hotel Haddon Hall). Sec., Bailey B. Pepper, Agricultural Experiment Station, New Brunswick, N. J.

March 6-8—Washington, D. C.
AMERICAN SOCIETY FOR PUBLIC ADMINISTRATION. Annual Meeting (Statler Hotel). Sec.-Treas., Laverne Burchfield, 1313 E. 60th St., Chicago 37, Ill.

March 8-12—College Station, Texas
TEXAS WATER WORKS AND SEWERAGE ASSOCIATION. Annual Meeting (Texas A & M College). Exec. Sec., V. M. Ehlers, Bureau of Sanitary Engineering, State Department of Health, Austin, Texas.

March 11-13—Atlantic City, N. J.
NEW JERSEY SEWAGE AND INDUSTRIAL WASTES ASSOCIATION. Annual Meeting (Hotel Traymore). Sec.-Treas., Michael S. Kachorsky, P. O. Box 766, Manville, N. J.

***March 11-14—New Orleans, La.**
AMERICAN PLANNING AND CIVIC ASSOCIATION. Annual Conference (St. Charles Hotel). Exec. Sec., Harlean James, 901 Union Trust Bldg., Washington 5, D. C.

March 16-18—Little Rock, Ark.
ARKANSAS WATER AND SEWAGE CONFERENCE. Annual Meeting (Hotel Marion). Sec., Harrison Hale, Southern State College, Magnolia, Ark.

March 18-20—Chicago, Ill.
AMERICAN WATER WORKS ASSOCIATION—Illinois Section. Annual Meeting (LaSalle Hotel). Exec. Sec., J. Leslie Hart, 122 S. Michigan Ave., Chicago 3, Ill.

***March 19-20—Chapel Hill, N. C.**
SOUTHERN MUNICIPAL AND INDUSTRIAL WASTE CONFERENCE. Jointly sponsored by Duke University, the University of North Carolina, and North Carolina State College. Requests for program information should be addressed to Dr. Daniel Okun, Associate Professor of Sanitary Engineering, School of Public Health, University of North Carolina, Chapel Hill, N. C.

April 6-9—Lafayette, Ind.
PURDUE ROAD SCHOOL. Annual Meeting (Memorial Union Building). Exec. Sec., Ben H. Petty, C. E. Bldg., Purdue University, Lafayette, Ind.

April 16-18—Portland, Ore.
AMERICAN WATER WORKS ASSOCIATION—Pacific Northwest Section. Annual Meeting (Multnomah Hotel). Sec.-Treas., O. P. Newman, P. O. Box 548, Boise, Idaho.

***April 19-22—Hartford, Conn.**
ASSOCIATION OF STATE PLANNING AND DEVELOPMENT AGENCIES. Annual Conference (Hotel Bond). Sec., Walter H. Blucher, 1313 E. 60th St., Chicago 37, Ill.

April 22-24—Wichita, Kans.
AMERICAN WATER WORKS ASSOCIATION—Kansas Section. Annual Meeting (Hotel Broadview). Sec., Harry W. Badley, 119 W. Cloud, Salina, Kans.

April 23—Kalispell, Mont.
MONTANA SEWAGE WORKS ASSOCIATION. Annual Meeting (Kalispell Hotel). Exec. Sec., Harvey W. Taylor, State Board of Health, Helena, Mont.

April 24-25—Kalispell, Mont.
AMERICAN WATER WORKS ASSOCIATION—Montana Section. Annual Meeting (Kalispell Hotel). Exec. Sec., A. W. Clarkson, State Board of Health, Helena, Mont.

April 27-29—Washington, D. C.
CHAMBER OF COMMERCE OF THE UNITED STATES. Annual Meeting (Chamber Building). Exec. Vice-President, Arch Booth, 1615 H St. NW., Washington 6, D. C.

May 4-6—West Lafayette, Ind.
INDUSTRIAL WASTE UTILIZATION CONFERENCE. Annual Meeting (Purdue Union Bldg). Exec. Sec., Don E. Bloodgood, CE Building, Purdue University, Lafayette, Ind.

May 10-15—Grand Rapids, Mich.
AMERICAN WATER WORKS ASSOCIATION. Annual Convention with Exhibits (Municipal Auditorium). Sec., Harry E. Jordan, 521 Fifth Ave., New York 17, N. Y.

***May 11-12—Washington, D. C.**
NATIONAL HOUSING CONFERENCE. Annual Meeting (Hotel Statler). Exec. Vice-Pres., Lee F. Johnson, 1129 Vermont Ave. NW., Washington 5, D. C.

May 11-15—Chicago, Ill.
NATIONAL FIRE PROTECTION ASSOCIATION. Annual Meeting (Palmer House). Gen. Mgr., Percy Bugbee, 60 Batterymarch St., Boston, Mass.

May 12-14—Boston, Mass.
AMERICAN PUBLIC POWER ASSOCIATION. Annual Meeting (Sheraton Plaza). Gen. Mgr., Alex Radin, 1757 K St. NW., Washington 6, D. C.

May 20-22—Omaha, Nebr.
NATIONAL INSTITUTE OF MUNICIPAL CLERKS. Annual Meeting (Hotel Fontenelle). Pres., Arthur J. Shinners, Town Hall, Brookline 47, Mass.

May 31-June 4—Miami, Fla.
MUNICIPAL FINANCE OFFICERS' ASSOCIATION of the United States and Canada. Annual Conference on Municipal Finance (Hotel McAllister). Dir., Joseph F. Clark, 1313 E. 60th St., Chicago 37, Ill.

***May 31-June 5—Cleveland, Ohio**
AMERICAN ASSOCIATION OF SOCIAL WORK. National Conference of Social Work. (Hotels Cleveland and Statler). Exec. Sec., Joe R. Hoffer, 22 W. Gay St., Columbus 15, Ohio.

***June 16-19—Seattle, Wash.**
AMERICAN INSTITUTE OF ARCHITECTS. Annual Meeting (Hotel Olympic). Exec. Dir., Edmund R. Purves, 1735 New York Ave. NW., Washington 6, D. C.

***June 18-21—Yellowstone National Park, Mont.**
NATIONAL ASSOCIATION OF TAX ADMINISTRATORS. Annual Meeting (Old Faithful Inn). Exec. Sec., Charles F. Conlon, 1313 E. 60th St., Chicago 37, Ill.

***June 25-27—San Francisco, Calif.**
AMERICAN INSTITUTE OF PLANNERS. Annual Meeting (Mark Hopkins Hotel). Exec. Sec., Perry L. Norton, Room 5-406A, 77 Massachusetts Ave., Cambridge 39, Mass.

***Sept. 20-27—Montreal, Canada**
U. S. CONFERENCE OF MAYORS AND CANADIAN FEDERATION OF MAYORS AND MUNICIPALITIES, Joint Meeting. International Municipal Congress. Exec. Dir. of U. S. Conference of Mayors, Paul V. Betters, 730 Jackson Pl. NW., Washington, D. C. Exec. Dir. of Canadian Federation of Mayors and Municipalities, George S. Mooney, Mount Royal Hotel, Montreal 2, Quebec, Canada.

Sept. 28-30—Poland Spring, Maine
NEW ENGLAND WATER WORKS ASSOCIATION. Annual Convention with Exhibits (The Poland Spring House). Sec., Joseph C. Knox, 73 Tremont St., Boston 8, Mass.

Oct. 13-16—Miami, Fla.
FEDERATION OF SEWAGE AND INDUSTRIAL WASTES ASSOCIATION. Annual Convention with Exhibits (Municipal [Bayfront Park] Auditorium). Sec., W. H. Wisely, 325-26 Illinois Bldg., Champaign, Ill.

Oct. 18-21—Houston, Texas
AMERICAN WATER WORKS ASSOCIATION—Southwest Section. Annual Convention with Exhibits (Rice Hotel). Sec.-Treas., Leslie A. Jackson, Robinson Memorial Auditorium, Little Rock, Ark.

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Zoning and Planning Notes

Edited by NORMAN WILLIAMS, Jr.

Acreage Zoning Again

NEW JERSEY. *Fischer* v. *Bedminster Township*, 90 Atlantic (2d) 757 (Superior Court, July 2, 1952).

NEW YORK. *Franmor Realty Corp.* v. *Village of Old Westbury*, 116 New York Supplement (2d) 68 (Appellate Division, October 20, 1952).

In the New Jersey case, the Court upheld a five-acre requirement for residential construction in a district of a sparsely populated township, covering 24 square miles and with a population of some 1,600. The rolling countryside included wooded areas, farms, and country estates. The challenge to the ordinance resulted from an attempt to build on a plot of just over half an acre.

The opinion, like many recent ones in New Jersey, began with an essay on the recent expansion of zoning powers in that state; and, again typically, continued with an intelligent—though here rather irrelevant—discussion of the importance of not recreating blight in new areas. The opinion said:

> The manifest design of modern judicial approach is to save a repetition of the blighting slums that are in many cases the by-product of living in highly industrialized communities with the resultant depreciation of surrounding property values and the creation of a source of infection of the body social. In many instances it is too late to attempt to remedy this situation save by demolition and rebuilding. To a lesser extent this condition persists in suburban communities on the periphery of these highly industrialized areas and the attempt has been to contain rather than permit an extension of building processes which will break down such relatively small amounts of property as are still susceptible of protection. . . .
>
> We are dealing here with a community practically virgin in character from the standpoint of future development.

In the rest of the opinion the Court merely noted that the governing body gave serious thought to this zoning regulation, sought expert advice, and held a public hearing thereon. It was, therefore, decided that the five-acre provision was neither arbitrary nor unreasonable.

The five-acre provision involved here is the most extreme of the recent rash of acreage zoning cases. In the present process of suburban sprawl, there is much to be said for preserving a few areas with a real semi-rural atmosphere—lots of trees and greenery around houses, very little traffic to disturb peace and quiet and to endanger children, substantial freedom from the sense of urban crowding, etc.; those who desire this kind of living should not necessarily be forced to travel 100 or 150 miles every day to and from work. There is also a strong argument against acreage zoning—that in certain circumstances it can be used as another form of economic segregation. There are also two special situations where it may be justified—to delay premature and scattered subdivisions at the suburban fringe, and to provide sufficient space within a lot to the care of drainage from septic tanks. The *Bedminster* opinion is almost uniquely free of any awareness of these problems, or of any indication of what its real basis is. Not much enlightenment—or agreement—can be obtained from discussing zoning in such vague terms as "reasonableness" or "general welfare." Nor can it be argued seriously that a *five-acre* restriction is needed to prevent future slums. As indicated in this column last month, it may be that some New Jersey courts interpret the recent (and long-awaited) expansion of zoning powers in that state as a mandate almost to set zoning apart from the operation of normal constitutional guarantees.

The New York decision simply upheld a two-acre restriction, on the authority of an earlier New York opinion also involving two acres.

Chicken Farming in Residence Districts

NEW JERSEY. *De Benedetti* v. *River Vale Township*, 91 Atlantic (2d) 353 (Appellate Division, September 25, 1952).

In this case a part-time chicken farmer, having lost his other employment, decided to devote full time to the enterprise and to enlarge his operations by doubling the facilities for laying chickens. The relevant residential zoning regulations specifically provided that anyone engaged in farming could rebuild, enlarge, or erect additional buildings "in the normal course of such business," and regulated the size and location of accessory buildings. The Court, also following recent New Jersey tradition, went into an extensive discussion of the land-use pattern in the township, as an aid in visualizing the most appropriate use of land in this neighborhood.

> This rule * goes beyond the finding based strictly on the police power, other than general welfare, and establishes a test grounded in the community use of the land in the municipality with due consideration to all general conditions and needs, present and reasonably to be anticipated in the region. It is, accordingly, necessary to obtain a broad perspective of the municipality and the region in which it is located.

It was specifically held that the change from a part-time to a full-time enterprise did not affect the right to enlarge operations, particularly since it would clearly be permissible to add facilities for a certain number of additional chickens each year, instead of making the whole increase all at once. It was also held that the chicken houses were not "accessory buildings," and thus not subject to the special provisions covering such buildings.

---

* In this context the Court had just quoted from *Duffcon Concrete Products* v. *Borough of Cresskill*, 1 New Jersey 509, 64 Atlantic (2d) 347.

Height Restrictions—Greenhouse Smoke-Stack

NEW JERSEY. *Pequannock Township* v. *De Wilde*, 91 Atlantic (2d) 410 (Appellate Division, October 2, 1952).

The residential zoning regulations in this case permitted existing greenhouses to continue, subject to a requirement that smoke-stacks should not exceed 40 feet in height. The owner of such a greenhouse built a 50-foot smoke stack, and the Court held that this constituted a direct violation of a valid ordinance. It was noted that a different type of heating equipment could have been installed, for which a 40-foot stack would have been adequate.

Destruction of Non-Conforming Uses

NEW JERSEY. *D'Agostino* v. *Jaguar Realty Co.*, 91 Atlantic (2d) 500 (Superior Court, October 3, 1952).

In this case a plant manufacturing rubber goods, a non-conforming use in a residence district, was almost completely destroyed by fire. The local zoning ordinance (in New Milford, a small and primarily single-family residential community) permitted restoration of a non-conforming use "in the event of partial destruction thereof," and restricted enlargement or alterations. The Court held, quite correctly, that the reference to "partial destruction" indicated an intent to forbid reconstruction in cases such as this.

Apartment in Single-Family Area

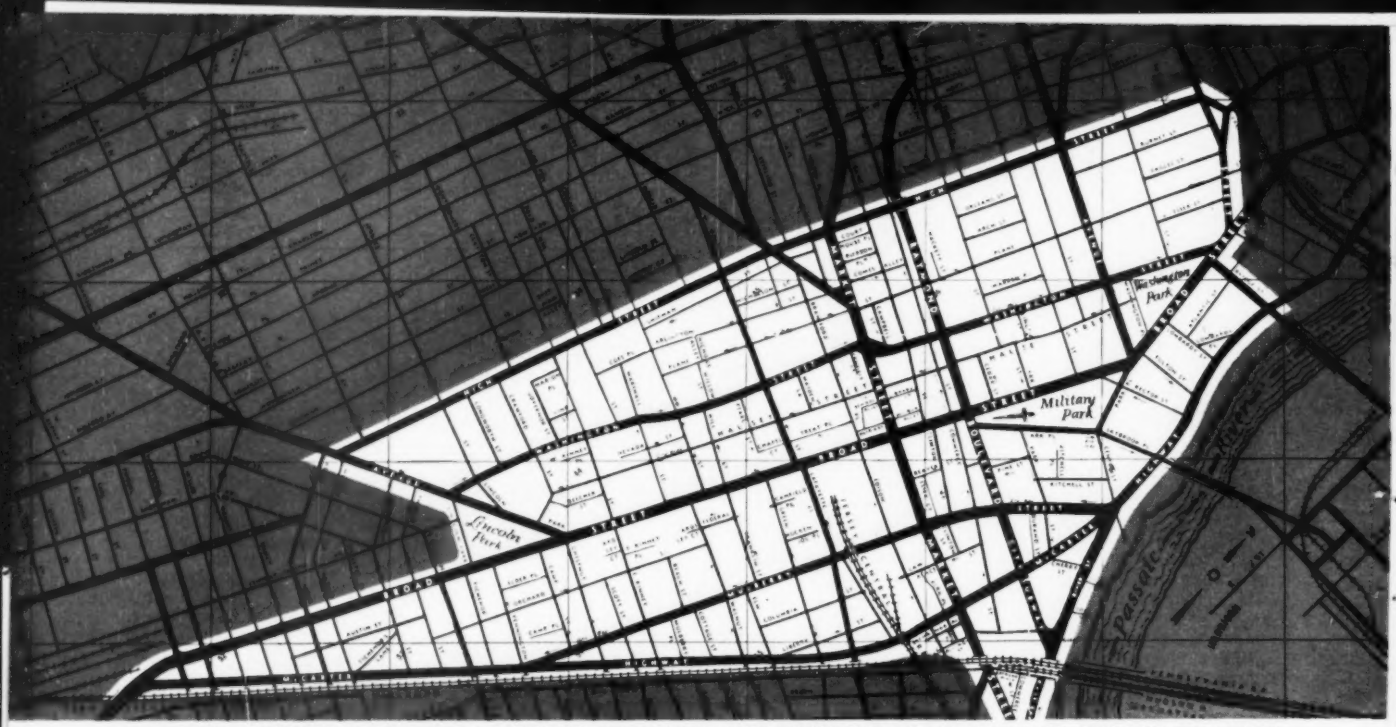
INDIANA. *Antrim* v. *Hohlt*, 108 North Eastern (2d) 197 (Appellate Court, October 23, 1952).

This case involved a single-family restriction in an area which the opinion states was referred to as "residential" in the "master plan." It appears that the Court was using the word "residential" to refer only to single-family houses, and the phrase "master plan" to refer to the over-all scheme set forth on the zoning maps.

A three-story apartment building, with 83 dwelling units and 60 accessory parking spaces, was proposed on a lot (about 400 by 300 feet) in the City of Indianapolis. It appeared that the proposed apartment would have only 1,400 square feet of lot area per dwelling unit, instead of 7,500 as required in the district. The local zoning ordinance authorized the Board of Appeals to grant exceptions for uses which are in harmony with the general purpose and intent of the zoning regulations, and appropriate to the types of uses and buildings permitted in the district or existing nearby. The proposed apartment was opposed by neighbors on the ground that it would change the character of the neighborhood, would overtax the present sewers, and would increase traffic hazards.

The single-family restriction was upheld in the following vague and confused terms:

(*Continued on page* 167)



MAIN ARTERIES CONVERGE UPON CENTER OF NEWARK. WHITE AREA, NOW CONTROLLED BY G-E EQUIPMENT, GETS HEAVIEST TRAFFIC

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MAJOR PROBLEM is essential bus traffic. Here engineers study rush-hour timing. G-E Type F traffic-control equipment permits proper timing and color sequence to be adjusted simply and quickly.

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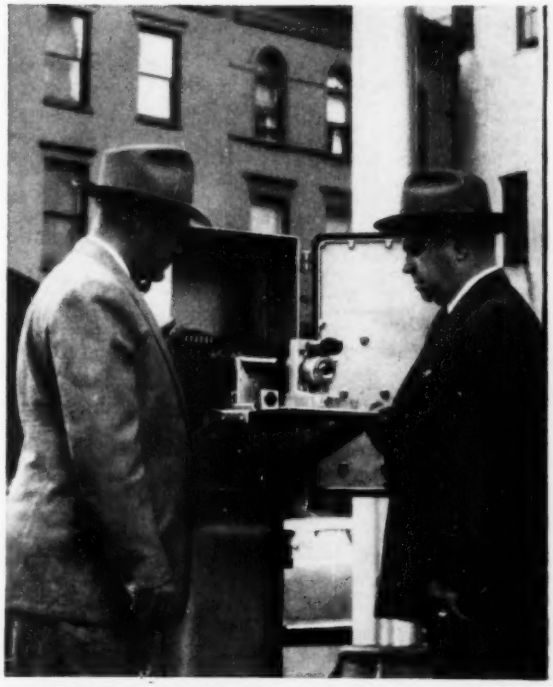

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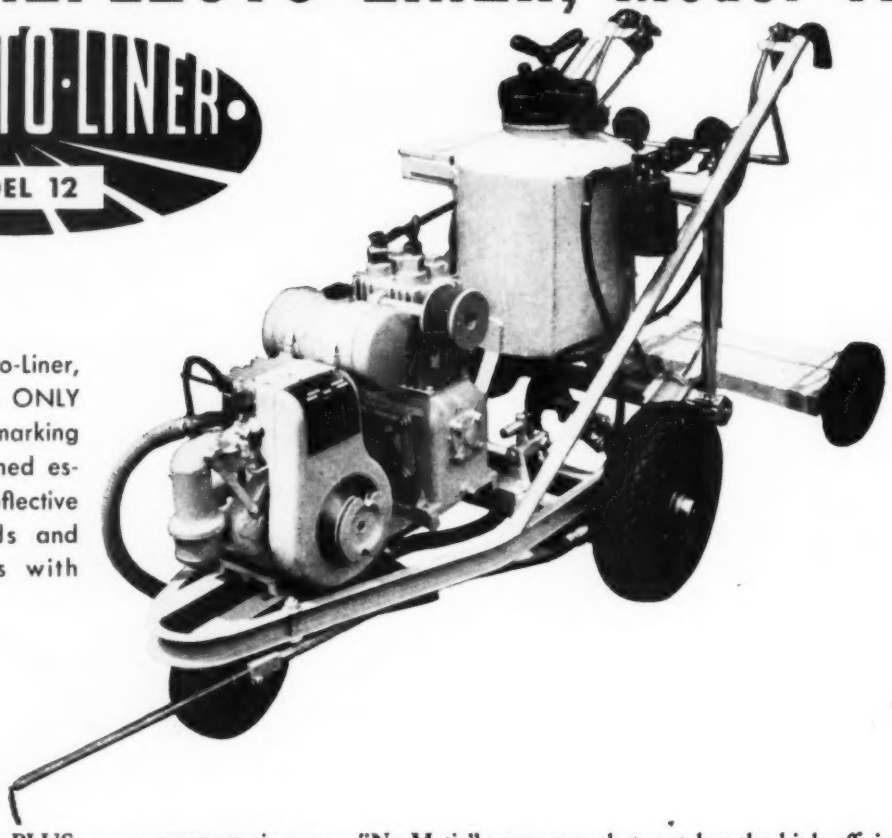

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The Model 8 (Body Powered) and Model 8T (Traction) embody the hi-capacity "Nu-Matic" Spray gun, making it possible to cut parking lanes to within 1½" of the curb. A constant air supply of 50% reserve is maintained during operations.

Write for Bulletin #508

Wald Industries Inc.

MONTGOMERY, PA.

(*Continued from page* 163)

A single family restriction is a valid zoning regulation since it bears substantial relation to the public safety and to the general welfare. The quiet of natural surroundings and vegetation in a residential district as opposed to the increased risks and annoyances of various natures by reason of a change from a single- and two-family district to an area of apartment buildings bears substantial relationship to the public safety and general welfare as to constitute a valid zoning regulation.

Moreover, the Court held that under the above provisions, an exception could not be granted for a change which would affect the whole character of the neighborhood.

Union Club and Office In Apartment District

ILLINOIS. *Brotherhood of Railroad Signalmen of America* v. *Zoning Board of Appeals of City of Chicago*, 108 North Eastern (2d) 43 (Appellate Court, September 24, 1952).

A national labor union (with a membership of some 13,000) bought an old brick residence located in an apartment district, and remodeled the building by installing certain recreational facilities and allocating one room for an office for clerical work. The Court held that such an establishment constituted a "fraternity" and was, therefore, permitted in an apartment district.

Manifestly every large fraternal society necessarily maintains records of its membership and especially where, as here, members are scattered all over the nation and it must correspond with them.

In our view the undisputed evidence shows that petitioner has all the essential attributes of a fraternity, and that it uses the premises as a fraternity within the meaning of the zoning ordinance here involved.

Legal Notes and Decisions

Prepared by NATIONAL INSTITUTE OF MUNICIPAL LAW OFFICERS
Charles S. Rhyne, General Counsel

NIMLO's Annual Conference a Great Success

THE National Institute of Municipal Law Officers held its greatest and most successful annual conference in its 17-year history in Louisville, Ky., on December 1, 2, and 3, 1952.

New Officers

The conference was highlighted by the election of the following NIMLO officers for 1952:

President, David M. Proctor, City Counsellor of Kansas City, Mo.
First Vice-President, A. C. Van Soelen, Corporation Counsel of Seattle, Wash.
Second Vice-President, Henry B. Curtis, City Attorney of New Orleans, La.
Third Vice-President, Joseph H. Crowley, Director of Law of Cleveland, Ohio.
Treasurer, Niemond F. Keller, City Solicitor of Waynesboro, Pa.

Trustees elected:

Joe W. Anderson, City Attorney, Chattanooga, Tenn.
Ray L. Chesebro, City Attorney, Los Angeles, Calif.
Walter J. Mattison, City Attorney, Milwaukee, Wis.
Herman C. Wilson, City Attorney, Greensboro, N. C.
Anne X. Alpern, City Solicitor, Pittsburgh, Pa.
Alexander G. Brown, City Attorney, Portland, Ore.
Charles Handler, Corporation Counsel, Newark, N. J.
Denis M. Hurley, Corporation Counsel, New York, N. Y.
John J. Mortimer, Corporation Counsel, Chicago, Ill.
Thomas N. Biddison, City Solicitor, Baltimore, Md.
Barnett I. Shur, Corporation Counsel, Portland, Maine.

Regional Vice-Presidents elected:

William L. Baxter, Corporation Counsel, Boston, Mass.
August F. Walz, City Solicitor, Wilmington, Del.
Henry M. Bruestle, City Solicitor, Cincinnati, Ohio.
J. Elliot Drinard, City Attorney, Richmond, Va.
James Messer, Jr., City Attorney, Tallahasse, Fla.
C. M. Brenneisen, Jr., City Attorney, Kansas City, Kans.
George E. Murphy, City Attorney, Beaumont, Texas.
Leonard M. Campbell, City Attorney, Denver, Colo.
Dion R. Holm, City Attorney, San Francisco, Calif.

The Conference, through President Thomas N. Biddison, City Solicitor of Baltimore, Md., conferred Certificates of Award for Distinguished Public Service upon Walter J. Mattison, City Attorney of Milwaukee, Wis.; Niemond F. Keller, City Solicitor of Waynesboro, Pa., and Harold E. Hanson, City Attorney of Madison, Wis. The Certificates read:

The National Institute of Municipal Law Officers confers its Award for Distinguished Public Service upon [name] as a token of the esteem in which he is held by municipal attorneys throughout the Nation and in recognition of his outstanding contribution to the advancement of municipal government by his able work in developing and adapting the principles of municipal law to the solution of the many new and complex problems of modern municipalities.

The Resolutions Committee, headed by Ray L. Chesebro, City Attorney of Los Angeles, Calif., proposed, and after discussions from the floor, NIMLO adopted resolutions on the following items:

1. Priority of municipal tax liens over federal and private liens
2. Social security coverage for all municipal employees
3. Payments in lieu of taxes on federal property
4. To relieve municipalities of federal excise taxes on purchases of vehicles and parts
5. Against drawing of defense contracts to prevent local taxation
6. Withholding of local income taxes by federal agencies
7. Against issuance of municipal bonds to provide private industrial plants or factory facilities
8. Federal funds for relocation of public utilities caused by federal highway construction
9. Purchaser selection of bond counsel

In the last resolution on purchaser selection of bond counsel, NIMLO resolved:

That it disapproves the action taken by the Public Housing Administration in requiring local housing authorities to make conditional offerings of their bonds subject to the approving opinion of bond counsel to be selected by the successful bidder, as being an undue encroachment and infringement on the local autonomy of public agencies created by the states; as re-establishing a practice discredited and discontinued by municipalities many years ago; as representing a threat to the present sound practices in municipal financing generally; and as tending further to restrict the bond-counsel field, which is already too restrictive on municipalities.

NIMLO requested the repeal of this order of the Public Housing Administration, "so that local housing authorities may follow the same practices as municipalities in their financing, and not be compelled to adopt practices which municipalities have discredited and discontinued."

The Executive Committee chose Washington, D. C., as the place for the 1953 Annual Conference, and arrangements are going forward to present another program of equal interest and importance to the municipal attorneys of the Nation. All municipal attorneys are being urged to send their suggestions for a program and events for this conference to NIMLO's Washington office for consideration by the Executive Committee.

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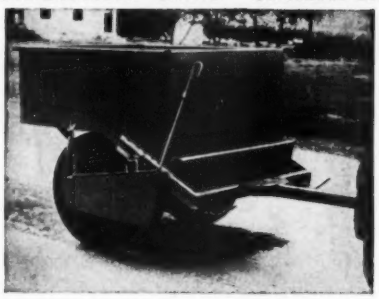

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Recent City Manager Appointments

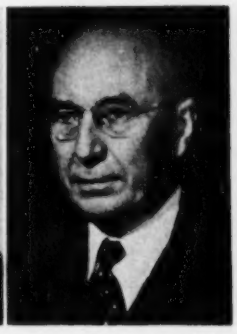
The following portraits are of city managers whose appointments have been announced in preceding issues of *The American City* *

Carleton K. Rush
Vassar, Mich.

Richard H. Custer
Kenosha, Wis.

Robert Williams
Needles, Calif.

James E. Neal
Vancouver, Wash.



Henry H. George III
Norfolk, Va.

ALBERT E. AXTELL, former city manager of Kenosha, Wis., was appointed at Glenwood Springs, Colo., succeeding W. E. Ralls.

Hazard, Ky., has chosen W. G. BABBITT, formerly in the engineering business, to succeed B. T. Campbell.

J. C. BOONE succeeds Cecil Stewart as city manager of Hubbard, Texas.

RAYMOND E. DORAN, JR., formerly administrative assistant at Antioch, Calif., has been appointed as the first administrative officer of Concord, Calif.

The new city manager of Burbank, Calif., is EDGAR J. FRIEDRICH, formerly assistant city manager there, succeeding J. H. McCambridge, who died November 4.

ALFRED S. HARDING, former manager of Bridgton, Maine, succeeds R. C. Violette as city manager of Newport, N. H.

H. S. THORGRIMSEN, formerly with Griffenhagen & Associates, was appointed city manager of Rapid City, S. D., succeeding H. A. BABCOCK.

The first city manager of Phillips, Maine, is CHARLES E. TOOTHAKER.

LEROY TRAFTON, formerly director of finance, was appointed city manager of Richfield, Minn., succeeding E. H. Allen.

HAROLD B. VASEY, former city manager of Brookfield, Mo., succeeds G. P. Searight as manager at Carlisle, Pa.

Holden, Mass., has appointed its first city manager, DANA T. WHITMAN.

ROBERT V. YOUKEY, formerly engineer-administrator, has been selected as the first city manager of North Miami, Fla.

CLARENCE E. RIDLEY, *Director*
International City Managers' Assn.
Chicago, Ill.

* THE AMERICAN CITY regrets that the portrait captions of City Managers Joe H. Latimore of Twin Falls, Idaho, and R. J. Rountree, Jr., or Altavista, Va., were transposed in printing the December 1952 issue.

National Municipal League Holds Noteworthy Conference

WITH A registration of 1,004 members and guests, the National Municipal League held in San Antonio, Texas, November 17-19, its 1952 National Conference on Government.

The general theme of this exceptionally successful conference was "Citizen Action." Especial interest was shown in the hearings, on two afternoons, of the cities competing for the "All-America Cities" awards. These reports of progress achieved in various communities during 1952 as a result of intelligent citizen action were appraised by a jury of twelve, of which George H. Gallup, Director of the American Institute of Public Opinion, was foreman.

The eleven winners in the contest will be announced in an illustrated article in the February 10 issue (on sale January 27) of *Look* Magazine, co-sponsor with the National Municipal League of the contest, and in briefer form in the February issue of the *National Municipal Review* and of THE AMERICAN CITY.

At the annual membership meeting of the National Municipal League Henry Bruere was re-elected president, and John S. Linen and George S. Van Schaick, vice-presidents.

Drew University's Municipal Government Program

THIRTY-TWO registrants from five North Jersey counties attended fall-term classes in a new municipal-government program at Drew University at Madison, N. J. Offered for the first time in the 1952-53 academic year are two non-credit evening courses: "Municipal Administration and Evaluation" and "Principles and Practices of Assessing Property." A second term for both will begin February 5.

Drew set up the program to meet a need in its particular section of North Jersey, according to its president, Dr. Fred G. Holloway. The courses are geared to the problems of the numerous smaller municipalities in that suburban area.

The initial registration indicates that the courses have a broad appeal. Not only have they attracted councilmen, committeemen and assessors, but also municipal employees, interested citizens, and a representative of the League of Women Voters.

The administration course is directed by Thomas T. Taber, president of the Madison Borough Council. It features lectures by specialists in various phases of local government and "clinics" devoted to problems raised by class members. Part I was concerned with municipal organization, relationships with other levels of government, budgets, assessments, and tax collections. Among the topics to be considered in the second term are planning, zoning, fire and police activities, personnel administration, public health, records, and public relations.

A. E. Weiler, assessor in Maplewood township and a past president of the New Jersey Association of Municipal Assessors, is teaching assessing principles. This is a technical course dealing with the theoretical and practical aspects of assessing as applied to all types of land and buildings. It includes field trips for practice of actual assessments. Registrants for Part II must have completed Part I or have equivalent study or experience.

A Proposal from Former Governor Edison to President-elect Eisenhower

"A MAJOR national inquiry into ways and means of strengthening the states and municipalities so that they can carry a greater share of the business of American government" has been urged on President-elect Dwight D. Eisenhower by Charles Edison, former Governor of New Jersey. The proposal was made at the National Municipal League's annual conference, held in San Antonio, Texas, November 17-19, 1952.

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Municipal & Civic Publications

Municipal Income Taxes

MUNICIPAL INCOME TAXATION IN THE UNITED STATES—*By Leon Jay Quinto. Technical Monograph No. 2, Finance Project, Mayor's Committee on Management Survey of the City of New York, 250 Church St., New York 13, N. Y. May 1952. 126 pp.*

The development of local taxation on incomes recently resorted to by numerous communities is here outlined, and the nature of these taxes described. Where sufficient data have been available, these experiments are appraised. A separate chapter is devoted to the income tax in each of the following cities: Philadelphia, Scranton, Toledo, Springfield, Dayton, and the District of Columbia. The Louisville Occupational License Tax and the St. Louis Earnings Tax of 1948 are also covered.

Street and Highway Conference Proceedings

PROCEEDINGS OF THE FOURTH CALIFORNIA STREET AND HIGHWAY CONFERENCE, 1952—*Published by the Institute of Transportation and Traffic Engineering, University of California. Distributed by University Press, Berkeley 4, Calif. 129 pp. $1.*

Covering all phases of street, road, and highway administration, engineering, and operations, including traffic and safety, the annual California conference is a principal forum for road men in the state. The extensively illustrated Proceedings of the 1952 conference comprise 29 papers grouped under the general headings: Over-All Problems; Planning and Administration; Road Construction and Research, and Traffic, Vehicles, Safety.

College-Community Centers

CED AND ECONOMIC RESEARCH IN COLLEGE-COMMUNITY CENTERS—*Published by the Committee for Economic Development, 444 Madison Ave., New York 22, N. Y. November 1952. 23 pp.*

This booklet, a companion to "CED and Economic Education in the Public Schools," describes CED's role in assisting and supporting autonomous centers, established under university sponsorship, in which community leaders and faculty members join in the study of local economic problems. It tells how a college-community economic-research center operates, and how it is financed and it describes some of the centers already operating in various colleges and universities.

Annexation in Tennessee

ANNEXATION HANDBOOK FOR TENNESSEE MUNICIPAL OFFICIALS—*By Wallace Mendelson.—Published by the Municipal Technical Advisory Service, Box 8260, University Station, Knoxville, Tenn., in cooperation with the Tennessee Municipal League. MTAS Technical Bulletin No. 14. October 1952. 46 pp.*

This handbook for Tennessee municipal officials who are considering annexation as a solution for fringe-area problems presents and discusses briefly the factors that enter into a decision as to whether annexation should be undertaken. Legal and fiscal aspects, including the cost to residents of annexed areas, are discussed. The Appendix contains an editorial by Herbert J. Bingham, Executive Secretary of the Tennessee Municipal League, entitled "Annexation May Cure Cities' Malady; League Prepares to Lick Twin Troubles."

Pension Financing

FINANCING THE PENSION OBLIGATION—*Special Bulletin 1952 D—Published by the Municipal Finance Officers Association, 1313 E. 60th St., Chicago 37, Ill. November 1952. 4 pp. 35 cents.*

It is the purpose of this article to present the important factors and principles inherent in the financing of the pension obligation. A systematic method for meeting this cost in the most convenient and most economical manner is suggested for adoption by local governments.

Los Angeles Study Continued

METROPOLITAN LOS ANGELES, A STUDY IN INTEGRATION—*Published by The Haynes Foundation, 2324 S. Figueroa St., Los Angeles 7, Calif.*

IV. LAW ENFORCEMENT—*By Robert F. Wilcox 1952. 215 pp. Paper, $3.00; cloth, $3.50.*

V. SANITATION AND HEALTH—*By Winston W. Crouch, Wendell Maccoby, Margaret G. Morden, Richard Bigger. 1952. 168 pp. Paper, $2.25; cloth, $2.75.*

Vols. I, II, III, X, and XI of this comprehensive study of the Los Angeles Metropolitan Region were reviewed in the November 1952 issue of THE AMERICAN CITY.

The volume on Law Enforcement describes the functions of the Los Angeles Police Department, the County Sheriff's department, prosecuting agencies, and other policing agencies. It describes inter-departmental conflict and cooperation, and gives suggestions for a more integrated structure.

The volume on Sanitation and Health is a combination of two related research projects. The first, Sanitation (Crouch and Maccoby), will be published as No. 15 in the metropolitan studies of the Bureau of Governmental Research of the University of California; and the second, Cooperative Health Administration in Metropolitan Los Angeles (Morden and Bigger), has already been published by the same Bureau as No. 11 in its series. Both studies emphasize the integration of functions common to all governmental areas of the metropolis to ensure more scientific management and a reduction in the costs of local government.

Fire Protection in Los Angeles County

METROPOLITAN LOS ANGELES, A Study in Integration—*Published by The Haynes Foundation, 2324 S. Figueroa St., Los Angeles 7, Calif. 1952.*

VI. *"Fire Protection"—By James Trump, James R. Donoghue, and Morton Krol. I. 174. 16 pp. Paper, $2.25; Cloth, $2.75.*

Volume VI of the series published by the Haynes Foundation on various aspects of government cooperation in metropolitan Los Angeles shows that county and federal governments and 44 municipalities provide fire protection in Los Angeles County. The incorporated areas and the fire-protection districts cover about one-fifth of the expanse of the county which contains most of the population. The other four-fifths is served by the mountain battalions of the Forester and Fire Warden's Department and by the U. S. Forest Service. Most of the cooperation indicated in this study grows out of a realization of the interdependence of fire departments and the understanding that assistance given to a neighbor will be returned when needed.

Devising an Equitable Transit Fare Structure

THE REVISION OF THE RAPID TRANSIT FARE STRUCTURE OF THE CITY OF NEW YORK—*By William S. Vickrey. Technical Monograph No. 3, Finance Project, Mayor's Committee on Management Survey, 250 Church St., New York 13, N. Y. February 1952. 156 pp.*

This report indicates that the burden, present and prospective, upon New York City's budget attributable to the rapid transit deficit is perhaps the most important single factor in the city's financial problem. The report recommends that the uniform flat-rate of fare be abandoned in favor of a fare structure which takes into account the length and location of the ride and the hour of the day. There is considerable discussion of the mechanical details of collection devices that can bring such a zone-time fare-structure system into effect. The report and its recommendations provides stimulating material that may be of value in other cities faced with transit deficits and problems.

Fire Measures Against A-Bomb

A "FIRST BOOK" OF FIRE SAFETY IN THE ATOMIC AGE—*By Horatio Bond, Chief Engineer, National Fire Protection Association. National Fire Protection Association, 60 Batterymarch St., Boston 10, Mass. 1952. 84 pp. $3.*

This booklet outlines building safety measures which would reduce fire damage and increase survival rates in case of A-bomb attacks on cities. While consideration is being given to providing shelters which can give people a degree of protection from heat-flash, nuclear radiation, and blast forces, it points out that, in cities where a fire storm or conflagration may follow as a secondary effect of the attack, there may be additional loss of life of vast proportions. Deaths in World War II from attacks which resulted in fire storms included 84,000 in Tokyo, 60,000 in Hamburg, and 70,000 in Hiroshima.

A tip-off to the imminence of an A-bomb attack could be the issuance of orders by civil-defense authorities to remove all needless fire hazards, like rubbish and litter from backyards and attics, and the removal of dilapidated fences and sheds.

Fire-fighting measures will have to be reviewed, because there may be no water in city mains following an A-bomb attack. Many industrial plants, however, now have local tanks and other water sources independent of the public mains. Since it is possible to provide local water service in many buildings, automatic-sprinkler-protected buildings should do a good deal to increase the survival rate for both buildings and people.

Chicago Redevelopment

PRINCIPLES FOR PLANNING A COMPREHENSIVE PROGRAM OF REDEVELOPMENT—*Published by the Chicago Plan Commission with the cooperation of the Housing and Redevelopment Coordinator, City Hall, Chicago, Ill., September 1952. 21 pp.*

Part I of this report, covering the nature of blight and redevelopment, emphasizes the need for using all resources for harmonious rebuilding.

Part II lists major redevelopment programs currently underway, illustrating progress and emphasizing the need for coordinated planning.

Part III stresses the principles on which the comprehensive program to be proposed is being formulated.

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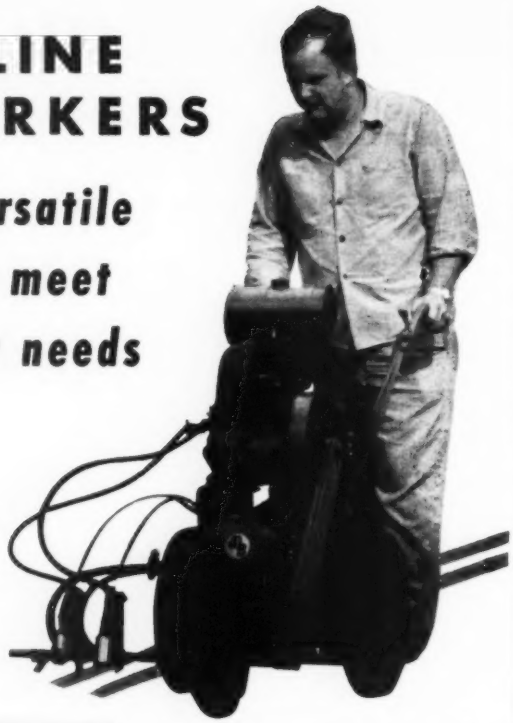

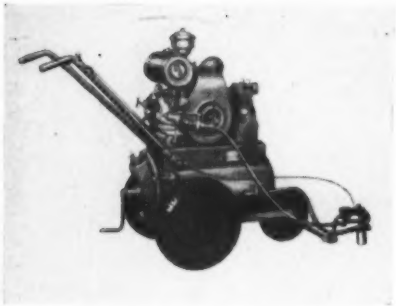

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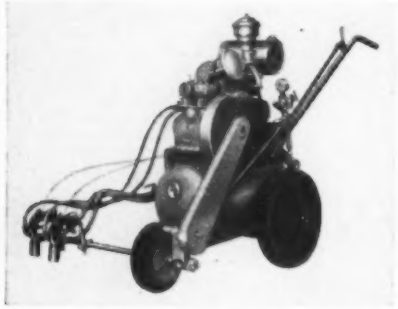

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Urban Conservation Guide

A PRIMER ON REHABILITATION UNDER LOCAL LAW ENFORCEMENT — *Committee on Rehabilitation, National Association of Real Estate Boards, 1737 K St. NW., Washington 6, D. C.* 1952. 68 *pp.*

This manual is a practical working guide to aid real estate boards in stimulating a definite type of community action that has proved itself to be the direct road to better housing conditions in older city areas. Nothing is proposed that has not been done in some city with success. It is a composite of the early experience of those communities which have pioneered in wholesale, impartial, and systematic enforcement of ordinances that outlaw substandard housing, and it summarizes progress in urban conservation. The manual points out that there is no "one way" to carry out a rehabilitation program, and that ordinances must be tailored to meet specific city needs. Included in the appendix are several examples of ordinances currently in force.

City Planning Children's Story

NEIGHBOR FLAP FOOT. The City Planning Frog—*By Bill Ewald and Merle Henrickson. Henry Schuman, Inc., 20 East 70th St., New York 21, N. Y.* 1952. 56 *pp.* $2.50.

Most of the things that a child should know about his neighborhood, how it works, how it has been planned, how it could be improved, why some changes should be made, and so on, he can learn from Flap Foot, an unusually wise frog. And the best part of it is that he can learn all this without pain. For this little book on city planning for the youngster is delightfully illustrated and interestingly written. It could be used to advantage in the lower grades or wherever an effort is being made to teach children something of neighborhood planning.

N. J. Municipal and School Finances

FINANCIAL STATISTICS OF NEW JERSEY MUNICIPALITIES AND SCHOOLS, 1952 *Edition—New Jersey Taxpayers Association, 143 E. State St., Trenton 8, N. J. November* 1952. 44 pp. $3.

The table here printed presents data under the following headings: Municipality; population; area; property tax rate; assessed valuation taxable; general property taxes levied; capital debt—municipal purposes; capital debt—school purposes; delinquent taxes and liens; per cent of taxes collected; municipal expenditures—operating; municipal expenditures—capital, debt service, total, and budget; school expenditures—operating; school expenditures—capital, debt service, total, and budget; school enrollment. The new form indicated in these headings aims to provide a true separation of expenditures for municipal functions (excluding utilities) and school functions and to segregate operating, capital and debt-service expenditures.

Census Bureau Summarizes City Finances

SUMMARY OF CITY GOVERNMENT FINANCES IN 1951. *Published and sold by the Bureau of the Census, Washington 25, D. C. November* 1952. 17 *pp.* 10 *cents.*

The figures in this report relate to the municipal corporations of the 481 cities in the United States which had over 25,000 inhabitants in 1950. The ten tables and related printed matter comprising the report cover general expenditures, utility expenditures, bonded debt, revenue by source and by population group, and finances of city employee-retirement systems, etc.

Preliminary Report on Neighborhood Conservation

PREVENTING TOMORROW'S SLUMS, A PLAN TO PRESERVE VALUES IN OLDER NEIGHBORHOODS—*Preliminary Report of the Interim Commission on Neighborhood Conservation, Room* 1610, 69 *W. Washington St., Chicago* 2, *Ill. October* 1952. 15 *mimeo pp.*

This preliminary report contains general comments on the importance of conserving the neighborhoods in which most of Chicago's families live. It points out that such conservation must be part of the over-all housing and redevelopment program begun in 1947, and it makes several specific proposals. The Interim Commission will continue this work and prepare recommendations in terms of resolutions, ordinances, requests for appropriations and suggestions for administrative action.

Building Line Setbacks

ARE BUILDING LINE SETBACKS VALID?—*By Gordon Whitnall,* 4313 *Leimert Blvd., Los Angeles* 8, *Calif.* 1952. 11 *mimeo pp.*

Intended to stimulate clear thinking on the validity of establishing building-line setbacks, the pamphlet reaches the conclusion that if this practice constitutes a taking without due process of law, "then the reservation for street and road purposes of every street, road, and highway in the country that has been dedicated for public purposes, as distinguished from being purchased outright, constitutes a taking without due process of law and compensation."

British Housing for the Aged and for Others in Special Circumstances

HOUSING FOR SPECIAL PURPOSES, *Supplement to the Housing Manual* 1949—*Report of the Housing Manual Subcommittee of the Central Housing Advisory Committee Under Extended Terms of Reference. Ministry of Local Government and Planning. May Be Purchased from Her Majesty's Stationery Office, York House, Kingsway, London, W.C.* 2, *England.* 1951. 44 *pp.* 2*s.*

Most of this report is devoted to the housing of old people and the housing needs of single workers, students, and apprentices, although there are also sections on dwellings for disabled persons, district nurses, and higher-income groups. Numerous pictures of housing already constructed in Great Britain, and plans for units in the categories above, should prove interesting to American architects, planners, and local officials, and also to readers interested in problems of the aged.

Do Taxes Affect Industrial Location?

EFFECTS OF TAXATION ON INDUSTRIAL LOCATION—*By Joe Summers Floyd, Jr. The University of North Carolina Press, Chapel Hill, N. C.* 1952. 155 *pp.* $3.

Although Dr. Floyd arrives at the conclusion that all broad generalizations concerning the supposed effect of tax differentials on the choice of plant sites should be treated with suspicion, he does find some interesting variations between the tax bills computed at median-tax locations of different states and between bills computed at high-tax and low-tax locations within individual states. Apparently few locations offer uniformly high or uniformly low tax loads to all types of industrial concerns. To prevent territorial inequalities in tax loads from having possible undesirable effects on the economic growth of the nation, the author feels that the inequalities should be reduced and he reviews various methods which might be used for this purpose.

How the Metropolitan Life Insurance Co. Helped Fight Tuberculosis

A 40-YEAR CAMPAIGN AGAINST TUBERCULOSIS — *By Louis I. Dublin, Ph.D. Published by Metropolitan Life Insurance Co., New York, N. Y.* 1952. 120 *pp.*

In the early 1900's tuberculosis led all other diseases as a cause of death, and also of disaster to entire families. For obvious reasons the Metropolitan Life Insurance Company has for over 40 years been active in fighting this killer and this book, distributed by the Metropolitan Life Insurance Company, tells the story of that fight. Starting with its own employees the Metropolitan began giving annual examinations, and established the Mount McGregor Sanatorium for treatment of those afflicted.

For policyholders and for the public at large, the Metropolitan has pursued an educational campaign, distributing warning leaflets and telling where aid could be obtained, and it has financed experiments for controlling the disease.

Marketing City Milk Efficiently

CITY MILK DISTRIBUTION—*By R. G. Bressler, Jr. Harvard University Press, Cambridge* 38, *Mass.* 1952. 404 *pp.* $6.

This study of marketing and marketing efficiency in milk will also serve as an example of the application of modern research techniques to problems in the marketing of many other commodities. The public official will discover in this book ways of developing objective criteria for certain aspects of retail and wholesale milk pricing. The author shows that alternate-day delivery has been very effective in reducing costs and that important additional savings could result from such programs as exclusive or zoned delivery areas and municipal districting.

New Housing Directory

HOUSING AND REDEVELOPMENT DIRECTORY 1952-1953, *Housing and Redevelopment Agencies Statistical Summary—National Association of Housing Officials,* 1313 *E. 60th St., Chicago* 37, *Ill. September* 1952. 227 *pp.*

The 1,309 listings in the 1952 edition of the Directory include county and municipal housing and redevelopment agencies, federal and state agencies that have housing or redevelopment functions, and also 78 unofficial bodies — citizen groups organized to promote better housing and redevelopment. Indicative of the growing concern with the nation's housing is the fact that local agency listings have increased 25% since the 1950 edition. The statistics given at the end of the book also reflect the growing housing activity. In addition to listing the address, name of executive director and/or chairman, type of program under which the agency is operating, etc., the Directory gives pertinent information on the housing and redevelopment laws of the various states.

Human Relations In a Housing Project

IN THE CITY WAS A GARDEN — *By Henry Kraus. Renaissance Press,* 545 *Fifth Ave., New York* 17, *N. Y.* 1951. 255 *pp.* $3.

This is a participant's first-hand record of human relations in a housing project for shipbuilders and their families. The war-built project was Garden City, at San Pedro, Calif., and the author reports on the growth and falling-off of community spirit, and political problems. Special attention is given to the unsuccessful efforts to organize and dispose of the project on a mutual home-ownership basis.

Technical Monographs of Mayor's Committee on Management Survey

THE MUNICIPAL DEBT—*A Description, Analysis and Appraisal of Debt Policy and Administration of the City of New York. Item No.* 6. *Technical Monograph Number One. By Frederick L. Bird. Published by the Finance Project of the Mayor's Committee on Management Survey of the City of New York,* 250 *Church St., New York* 13, *N. Y.* 1952. 148 *pp.*

In this monograph the author presents the results of a detailed study of the city's debt policy and administration. He feels that New York should be able to secure a better credit rating, and gives his reasons and remedies. The possibilities of increasing sinking fund revenues by modifying existing investment policies are also discussed.

BUDGETING AND FINANCIAL MANAGEMENT OF THE CITY OF NEW YORK—*Item No.* 9. *Technical Monograph Number Four. By A. E. Buck. Published by the Finance Project of the Mayor's Committee on Management Survey of the City of New York,* 250 *Church St., New York* 13, *N. Y.* 1952. 90 *pp.*

Budgeting for New York City, legislative authorization, and management and control of the city's finances are covered in the report. A lengthy Appendix, written by Homer E. Scace, deals with the preparation and administration of the expense budget.

Training Government Workers

PUBLIC RELATIONS FOR GOVERNMENT EMPLOYEES: AN ACTION PROGRAM—*By Eleanor S. Ruhl. Civil Service Assembly,* 1313 *E. 60th St., Chicago* 37, *Ill.* 35 *pp.* $2, *per copy. Quantity rates upon request.*

The first part of this pamphlet shows that public relations is a problem for every government employee and the second part gives some public-relations techniques. The check list for positive public relations presents 20 provocative questions by which employees may check up on their actions and on the impression they create. The selected public-relations bibliography at the end of the pamphlet is also valuable.

International Conservation Conference Proceedings

UNITED NATIONS SCIENTIFIC CONFERENCE ON THE CONSERVATION AND UTILIZATION OF RESOURCES (UNSCCUOR) PROCEEDINGS—

Vol. II. "Mineral Resources," U.N. Pub. Sales No. 1950. *II. B.3.* 303 *pp.* $3.

Vol. III. "Fuel and Energy Resources," U.N. Pub. Sales No. 1950. *II. B.4.* 333 *pp.* $3.

Vol. IV. "Water Resources," U.N. Pub. Sales No. 1950. *II. B.5.* 466 *pp.* $4.50.

Vol. V. "Forest Resources," U. N. Pub. Sales No. 1950. *II. B.6.* 325 *pp.* $3.

Vol. VI. "Land Resources," U.N. Pub. Sales No. 1950. *II. B.7.* 629 *pp.* $6.

Vol. VII. "Wildlife and Fish Resources," UN. Pub. Sales No. 1950. *II. B.8.* 259 *pp.* $2.50.

From U. N. Sales Agents in all countries. In the United States from Columbia University Press, 2960 *Broadway, New York* 27, *N. Y.*

The papers and discussions of the Plenary Meetings of this world congress held in 1949 were published in 1950 (U.N. Pub. Sales No. 1950. II. B.2. 431 pp. $4.50), and were noted at that time. All but the Index Volume (VIII) have now been published in English. Volumes I and II are already available in French, with the rest in preparation.

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700 government officials and scientists from more than 50 countries for nearly three weeks of technical discussions. More than 500 papers were read in six sections whose subject-matters are reflected in the titles of these volumes. Many of the papers deal with biological, chemical, or geological aspects of conservation; but entire meetings were devoted to the role of governments in the planning of conservation and in the management of resources, such as: comprehensive river-basin development, the organization of soil-conservation programs, the administration of forests, integrated power systems, and the management of fish and wild-life resources.

The discussions emphasize the problems of underdeveloped countries; many of the papers are reports of practice in one country. Others are substantial contributions, summarizing a world position, reviewing world knowledge and best practices. The total impact of the Proceedings is powerful; here is an army of competent and tenacious men at work in every corner of the globe to restore our plundered planet. No resolutions binding governments came from this scientific Congress; but it served to give courage to the participants—and to those who can now read the Proceedings—to continue their work. These volumes are indispensable on the reference shelf.

CHARLES S. ASCHER

Planning and Housing Reports

ALLENDALE, N. J.—A Comprehensive Plan. Prepared for the Planning Board, Borough Council, and the People of Allendale, by Scott Bagby and Weaver Pangburn, Planning Consultants, Upper Montclair, N. J. 1952. Illus. 30 pp.

CLEVELAND, OHIO — Six-Year Capital Improvement Program, 1953-1958. Cleveland City Planning Commission. 1952. Mimeo. Tables. 136 pp.

GLEN ROCK, N. J.—The Glen Rock Plan. A comprehensive guide for continuous action designed to maintain and increase basic social and economic values. Prepared by Scott Bagby and Weaver Pangburn, Planning Consultants, Upper Montclair, N. J. 1952. Illus. Tables. 72 pp.

PHILADELPHIA, PA.—Penn Center Redevelopment Area Plan. Philadelphia City Planning Commission, Market and Juniper Sts., Philadelphia 7, Pa. August 1952. Illus. 22 pp.

TULSA COUNTY, OKLA.—Population: Its Growth and Distribution in Tulsa County, 1907-1950. Tulsa County Planning Commission, 1212 S. Frisco, Tulsa, Okla. Report No. 1. 1952. Mimeo. 25 pp.

UNITED STATES—House and Site United. Housing and Home Finance Agency, Division of Housing Research, Washington, D. C. Construction Aid No. 3. June 1952. 27 pp. For sale by the Superintendent of Documents, U. S. Govt. Printing Office, Washington 25, D. C. 15 cents.

——Plumbing Fixture Arrangement. Housing and Home Finance Agency, Division of Housing Research, Washington 25, D. C. For sale by the Superintendent of Documents, U. S. Govt. Printing Office, Washington 25, D. C. 15 cents. 18 pp. Construction Aid No. 1. June 1952.

——Roof Gutters. Housing and Home Finance Agency, Division of Research, Washington 25, D. C. Construction Aid No. 2. June 1952. 11 pp. For sale by the Superintendent of Documents, U. S. Govt. Printing Office, Washington 25, D. C. 10 cents.

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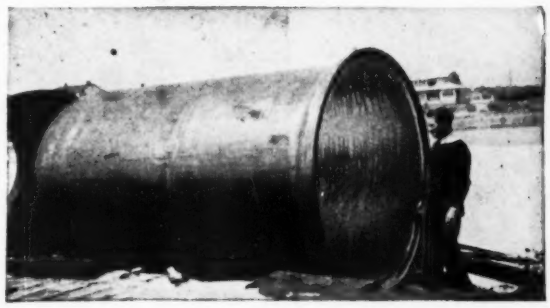

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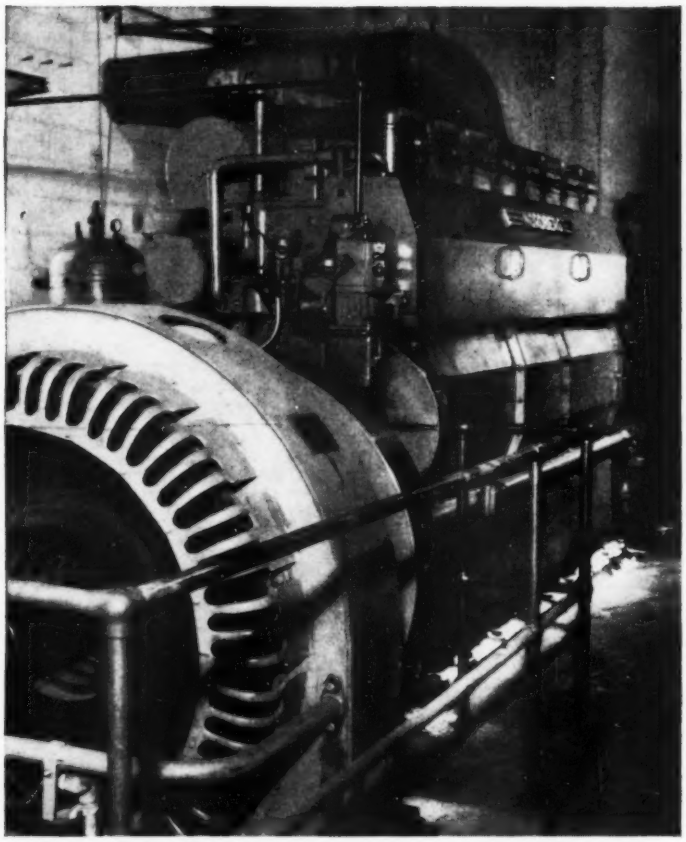
PLANTS: Phillipsburg, N. J. Everett, Mass.
WARREN PIPE CO. OF MASS. INC. 75 FEDERAL ST. BOSTON, MASS.
97 Years of Continuous Service

MORE POWER AT 50% LESS OPERATING COST

NORDBERG DUAFUEL® ENGINE increases capacity and stabilizes scrap yard operations

Your power problems may not involve electromagnets—but remember there are Nordberg Diesel, Duafuel® and Spark-Fired Gas engines built in sizes up to more than 10,000 hp—to meet practically every power requirement. Write for details, outlining your power needs.



Ever watch a lifting magnet in operation? Their fluctuating operation—from *no* load to *full* load in a matter of seconds, calls for a steady, reliable source of power—power that can stand the gaff of this kind of "up-and-down" service . . . *the kind of power you get with Nordberg Duafuel® engines.*

For proof, ask Consumers Steel & Supply Company, operators of one of the largest scrap yards in the Midwest. Here's what they did . . . to avoid expensive plant outages and provide more efficient, lower cost power generation, this progressive company installed a 530 hp Nordberg supercharged Duafuel Diesel engine driving a 320 kw generator. This single Nordberg engine took over the plant's power demand from three 66 kw high speed Diesel units. *The results:*

(1) Generating costs cut almost 50%; (2) Immediate response to changing load conditions; (3) Ability to operate balers, shears and cranes and magnets at full capacity—16 hours a day, 6 days a week; (4) Sufficient reserve for plant expansion.

Although of Duafuel design, the Nordberg engine is now operating on straight Diesel fuel. Further economies will be realized when gas availability will allow full Duafuel operation.

Nordberg Mfg. Co., Milwaukee, Wisconsin

NORDBERG

DIESEL • DUAFUEL® AND SPARK-FIRED GAS ENGINES

Builders of America's Largest Line of Heavy-Duty Diesels

P153

Other Reports Received

DES MOINES, IOWA—Water Works Annual Report for the Year Ended December 31, 1951. Illus. 28 pp.

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MARION COUNTY, IND.—Report and Recommendations for the Eighty-Eighth Session of the General Assembly, State of Indiana. Submitted by the Metropolitan Area Study Commission of Marion County, Indianapolis, Ind. November 1, 1952. Illus. 58 pp.

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OGLESBY, ILL.—Semi-Annual Report, May 1, 1952, to October 31, 1952. Office of the City Clerk. 30 pp.

OLNEY, MD.—Warden and Rescue Instructor Training. Federal Civil Defense Administration. Warden and Rescue Training, National Civil Defense College, Olney, Md. Illus. 7 pp.

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——Information Regarding the Financing of Projects of Municipalities and Other Public Agencies. Reconstruction Finance Corporation, Washington, D. C., Circular No. 22. September reprint of April 1952 Revision. 7 pp.

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A Public Housing Project Blueprints Rehabilitation

(Continued from page 99)

the State of New Jersey and the ordinances of the local Board of Health. In those instances where a landlord refused to comply with the standards of livability, the structure would be demolished. In either case it would cease to be substandard housing.

There followed a series of meetings between the agencies and the Board of Aldermen at which the administrative and legislative details for executing the objectives agreed upon were worked out. On July 14, 1952, the Mayor and the Board of Aldermen enacted an ordinance providing for the inspection of dwellings in the town and authorizing and directing condemnation of such dwellings as might be found to be substandard or uninhabitable. Provision was made also for the rehabilitation of units that, while substandard, could be made habitable through repairs. In case a landlord is unwilling to make such rehabilitation, discretionary power was granted the supervisor for the work to be done by the municipality and a lien for the cost thereof against the property was established, or the dwelling could be ordered demolished.

Supervisor of Rehabilitation Office Established

The ordinance, however, went further to assure that the program of rehabilitation of slum properties was carried out by setting up the Office of Supervisor of Rehabilitation with powers of inspection, investigation, and the determination of housing conditions. Scott M. Long, Jr., the attorney for the Housing Authority, was appointed Supervisor by the Mayor. Within a matter of days, the condemnation of substandard dwellings was under way.

The ordinance, which should serve other authorities as a blueprint for housing rehabilitation and urban redevelopment, provides in Section 2 that "Dwellings shall be considered unfit for human habitation within the meaning of Section 1, hereof, when one or more of the following conditions are found to exist." Then follow nine subsections dealing with "the conditions of structures." Just a listing of the titles reveals that the standards of the APHA have been followed with great fidelity and that due notice has been taken of the housing laws of the State of New Jersey and the regulations of its public health and safety agencies. The nine subtitles are: (1) Condition of Structures; (2) Water Supply; (3) Sewerage System; (4) Toilet Facilities; (5) Bath Facilities; (6) Kitchen Facilities; (7) Lighting Facilities; (8) Heating Facilities, and (9) Light and Ventilation.

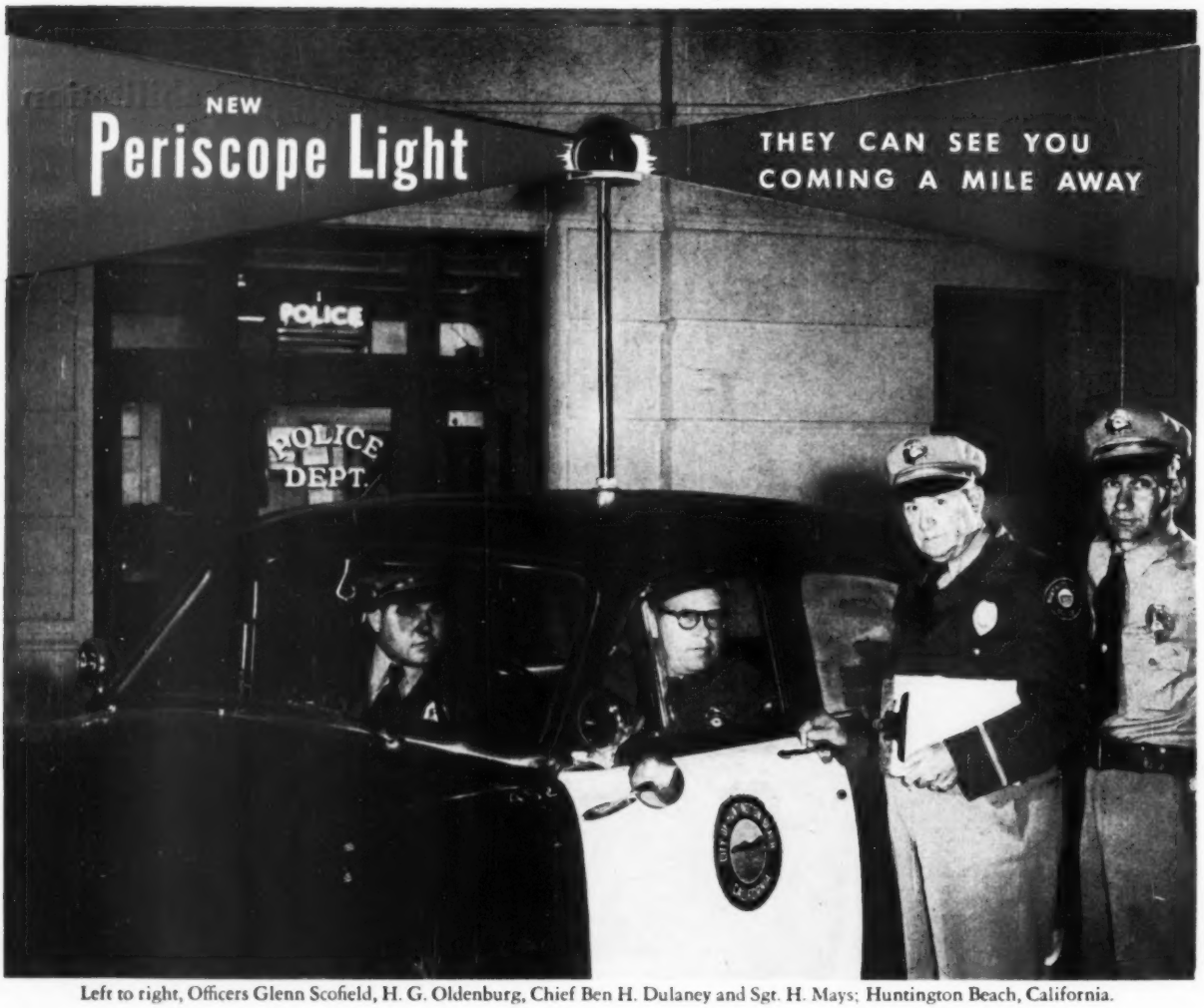
The day following the adoption of the ordinance for rehabilitation, the first family moved into the project. The selection of the other tenants was well under way and was completed in a short period of time. And from then on, demolition of the worst substandard units, the closing of others pending demolition or rehabilitation—the end product of the public-housing project — equivalent elimination — moved ahead.

Three major objectives were realized: (1) the meeting of the equivalent demolition or rehabilitation requirement of the Housing Act of 1949; (2) a drastic and immediate improvement of housing conditions in Morristown which arrested blight of standard residential areas and halted the decline of residential values, thus protecting the financial position of the municipality; (3) the legal implementation of standard residential areas under the ordinance which provides the means of keeping substandard housing from existing by the constant policing housing will receive from the office of the Supervisor of Rehabilitation.

American cities are no longer young. Allowing existing slums to remain and new ones to develop is the sure way toward municipal bankruptcy, while the prevention of deterioration assures stability and ends the frightful economic waste of housing blight. Today the premium is on the integration of all the agencies of the municipality for a rebirth of a clean, modern, efficient city, where the powers of the various boards merge into one powerful stream to which the state and federal governments also contribute.

Work Goes On

The United States Census of 1950 rates Morristown as having 577 substandard dwelling units. Since July 15, through the cooperation of the Housing Authority, the Board of Health, the Board of Aldermen, the Planning Commission, and the Supervisor of Rehabilitation, the scoreboard shows: 32 substandard dwellings demolished by the city, 2 dwellings demolished by enforcement of the Rehabilitation Ordinance; 9 dwellings demolished voluntarily by the owners on complaint by the Supervisor of Rehabilitation, and 58 dwellings susceptible of repair being rehabilitated by the owners at their expense up to the specifications established by the Office of Rehabilitation. The total substandard housing units thus eliminated is 106 to date. The work still goes on.



Left to right, Officers Glenn Scofield, H. G. Oldenburg, Chief Ben H. Dulaney and Sgt. H. Mays; Huntington Beach, California.

EASY TO OPERATE
Can be raised or lowered quickly, even in a speeding car.

EASY TO INSTALL
Can be installed in any vehicle in a few minutes.

EASY ON THE BUDGET
Costs little more than ordinary emergency lights.

This new light for emergency vehicles sticks up like a periscope, 3 feet above the top of the car. The red light flashes in all directions. Traffic can see you coming a mile away.

Each of our salesmen has a Periscope Light installed in his demonstration car. Drop us a line and we will have the man in your territory drive by and show you how this remarkable light works. There is no obligation whatever.

Periscope Light

PERISCOPE LIGHT CORP.
225 SPRINGS ROAD • VALLEJO, CALIF.

Dealer inquiries invited.

AMA Sets Program for '53

(*Continued from page* 130)

done in 1953 in these blunt terms:

1. Greater local responsibility must be accepted for local matters. You want it. It will be given to you. Take it. Our Committee on Home Rule is pointing the way with a new constitutional home-rule provision.

2. Within each state, cities must work together to have laws for adequate local revenues as far as possible and to obtain from the states any state-collected revenue that belongs—of its nature—to them, or is needed to perform activities required by state law.

3. Work to rectify inequities caused by the exemption from taxation of federal properties, particularly defense-connected properties, which impose heavy burdens on one community that should be borne by the entire nation.

4. Mayors and other city officials must take the lead in promoting greater highway safety by more adequate roads, more uniform laws, and better enforcement. Cooperation between the federal, state, county, and city officials in a given area is mandatory.

5. Municipal leaders must work for the big things and the hard-to-get things and not alone for smaller gains. They must be prepared to work alone or with others to obtain satisfactory state and federal laws and regulations. You will get just the kind of laws and regulations you are willing to work for.

6. The citizens, the state legislatures, and the national Congress must be better informed about the municipal problems. While municipalities furnish most of the services that citizens receive directly from government, still the size and glamor of the large units obscure the extent of local activities and local financial resources. A better-informed citizenry must be our goal.

7. Municipal representation in your state capitals and in Washington must be strengthened and expanded. While most of our city problems must be solved at home—and the tenor of the times indicates you will be forced to do that—still the municipalities must be represented where large matters are at stake. This organization is equipped for this task. . . .

Three well-attended daily panel sessions explored the special problems of large, medium-sized, and smaller cities respectively.

Mayor Cobo turned over the presidency to Mayor William B. Hartsfield of Atlanta, the vice-president of AMA during 1952. Mayor John B. Hynes of Boston was elected vice-president for the 1953 term.

The date and site of the 1953 congress were left to the discretion of the new board of directors.

A New Floor Saves an Old Bridge

AT CLENDENIN, W. VA., a 29-year-old steel bridge that had become dangerously weak recently underwent reconditioning that returned it to usefulness at only one-third the cost of a new bridge.

The bridge, built in 1923, was fashioned to care for the traffic needs of a rural village when motoring was light.

It was designed with a center span of almost 149 feet, using a through Pratt-type truss. The center span is flanked on the north side by a 66-foot clear-span Warren pony truss, and a 28-foot-span deck-plate girder. On the south side, it is flanked by a 78-foot clear-span Warren pony truss, and a 35-foot clear-span deck-plate girder. The roadway is 16 feet wide and has two 5-foot-wide sidewalks on each side.

Before reconditioning, the bridge suffered badly from present-day loads. Even with repeated replacement of the wood floor and recoating with asphalt, it still was woefully inadequate. The flooring became so dangerous that loaded school buses were not allowed over it.

The proposed remedy was that of using lightweight, open-mesh steel decking in place of this troublesome wood floor. To avoid dislocating traffic, the decking was replaced one lane at a time.

The new floor system has been designed in accordance with the West Virginia State Road Commission's specification of one 15-ton truck for each lane of traffic, with rear axles carrying 12 tons and the front, 3 tons.

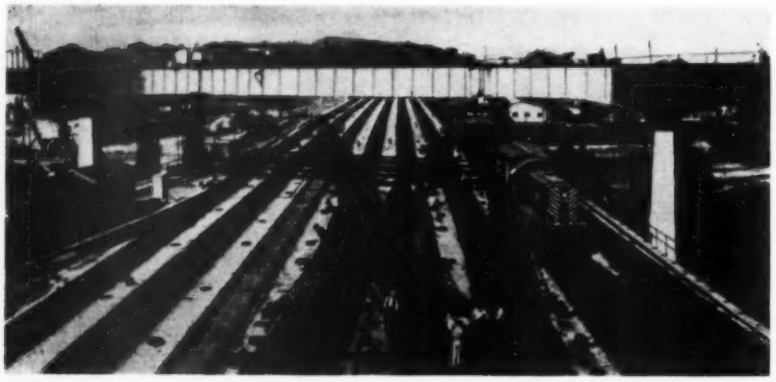
Some 6,000 square feet of open-mesh decking, supplied by the Irving Subway Grating Company, of Long Island City, N. Y., was required for the resurfacing.

The Clendenin Bridge was obviously in a bad way before it underwent rehabilitation and reconditioning.

Here is the same bridge with decking in place. Note that the load restriction sign has been removed.

Municipal Purchasing News

Information for officials interested in equipment and services for the construction, operation, and maintenance of municipal utilities



Girders of this Kansas City highway overpass metallized with .012 zinc to protect the steel from corrosive effects of flue gases from locomotives passing beneath 24 hours per day.

Corrosion Prevention With Metallized Zinc Or Aluminum

Tests of actual application over the past 25 years have produced sufficient evidence to demonstrate economical, long-term protection against corrosion provided by coatings of pure metallized zinc or aluminum. Life expectancies for protective coatings of this nature range upwards of 25 to 30 years, usually without further maintenance, according to Metallizing Engrg. Co., Inc., 38-14 30th St., Long Island City 1, N. Y.

Unlike galvanizing, metallized zinc is not limited as to the size of the structure or to the thickness of the coating which may be applied. Pure metallized aluminum provides even better protection than zinc in many heavy industrial atmospheres, since it is much more resistant to gases containing concentrations of sulphur, the company states.

Maintenance-free, life expectancies range upwards of 25 to 30 years on iron steel and steel structures and equipment, such as bridges and trestles, tanks of all kinds, steel piling, ship and boat hulls, superstructures and interior equipment, refrigeration equipment, and fabricated steel products.

Bulletin 62B describes and illustrates the application of 18 basic engineering specifications which provide long-term economical protection against corrosion. For a copy, write Metallizing Engrg. Co., Inc., 38-14 30th St., Long Island City 1, N. Y., or use the post card on the colored page in this section. Circle No. 13

Emulsified Asphalt For Street Maintenance

Paved surfaces require vigilant maintenance to preserve investment and insure riding comfort. Neglect is soon followed by deterioration of pavement and hazard to traffic. Asphalt is the indispensable ally of the maintenance forces. Bitumuls emulsified asphalt, always fluid, is the most suitable form of asphalt for maintenance work. Freedom from weather delays and heating expense result in minimum costs.

The American Bitumuls and Asphalt Co., 200 Bush St., San Francisco 4, Calif., in a new bulletin, describes how to use Bitumuls emulsified asphalt to keep pavements in good condition, and to extend their usefulness. The publication reports that Bitumuls is asphaltic binder in the form of liquid emulsion, made for use at atmospheric temperatures. When applied to stone or other surface, thin coatings of asphalt quickly appear, which have all the adhesive strength and durability of coatings made by use of refined asphalts applied hot.

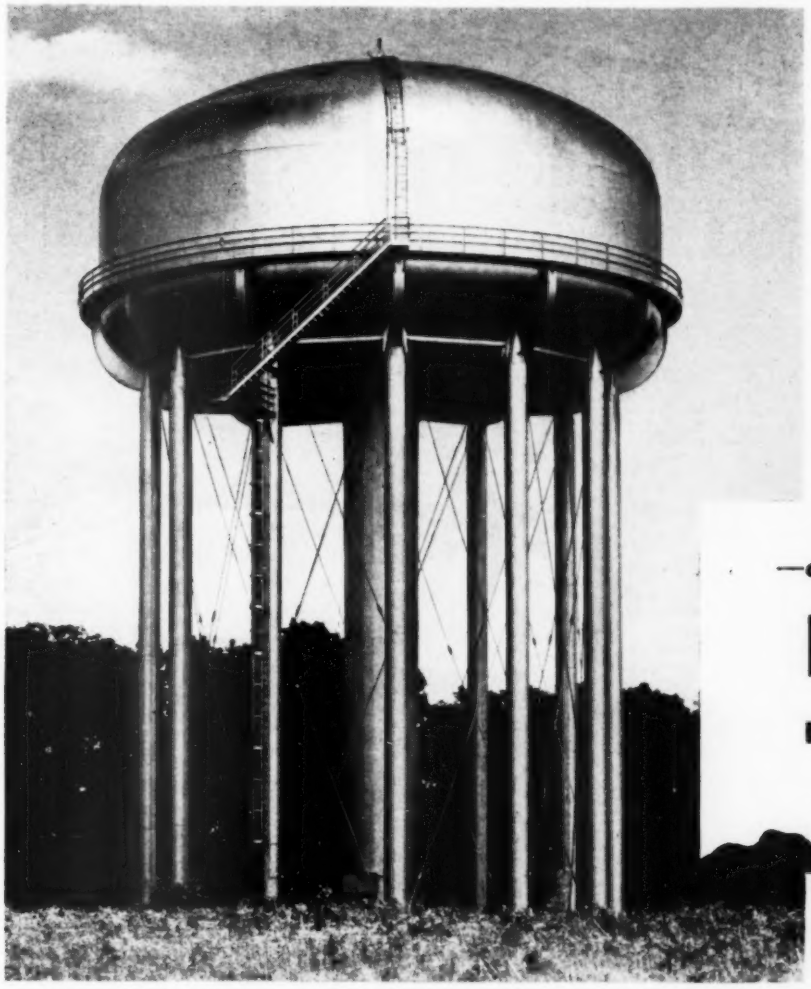
For different methods of use, Bitumuls emulsified asphalts are supplied in several grades, which vary mainly in time of set and ability to mix with fine materials. The manufacturer states that Bitumuls lengthens the construction season, withstands severe tests, is useful for repairing every type of paved surface, is convenient and economical, and is suited for all types of maintenance.

Among the other subjects discussed in this bulletin are: Bitumuls Surface Treatment for Maintenance, Non-Skid Surface Treatments, Equipment to Apply Quick-Setting Bitumuls Grades, Bitumuls Penetration Macadam for Maintenance, Bitumuls Cold Mixes for Maintenance, Bitumuls Maintenance of Unpaved Areas, Bitumuls Hot-Plant Mixes for Maintenance, and Bitumuls Maintenance of Rigid-Type Pavements.

For a copy, write the manufacturer, or use the post card on the colored page in this section. Circle No. 40.

She Prefers the New Model

Miss Doris Hall, member of the New York City Chapter of The National Secretaries Association, smiles her appreciation of the advances made in the typewriter field by Remington Rand Inc., as evidenced by its latest electric model (right) in comparison with its Model No. 1 which was the prototype of the modern secretary. Both these machines were displayed at the 29th Annual Women's Exposition in New York City. The typewriters are made by Remington Rand Inc., 315 Fourth Avenue, New York 10, N. Y. For further information, write the company, or use the Post Card on the colored page in this section. Circle No. 30.



for

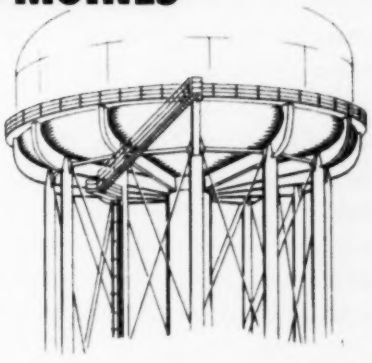
Cincinnati, Ohio

—a million gallon

RADIAL CONE

ELEVATED STEEL TANK

by PITTSBURGH • DES MOINES



The *Radial Cone* design is particularly applicable for elevated tanks of medium to large capacity where *low head range* is an important consideration. • Write for a discussion of the Pittsburgh-Des Moines elevated tank type best meeting *your* requirements.

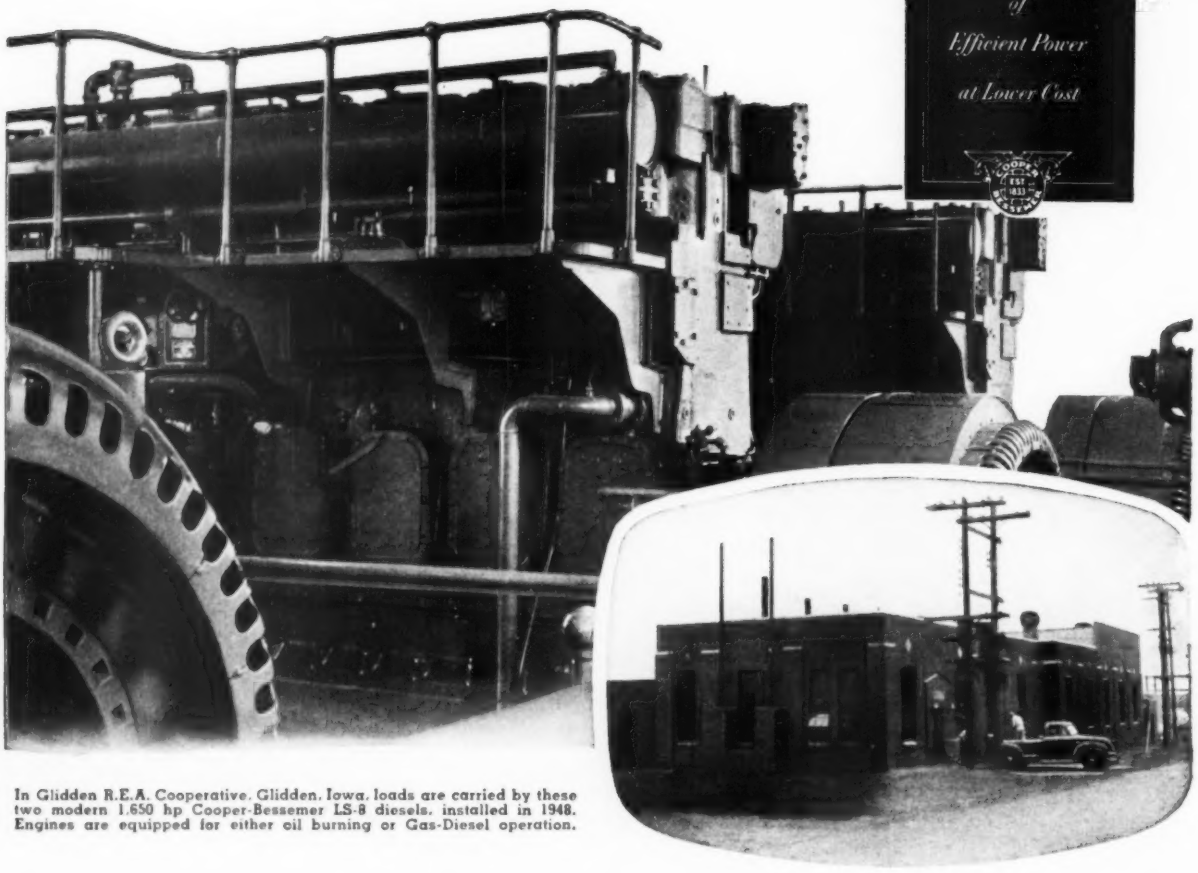
PITTSBURGH • DES MOINES STEEL CO.

Plants at PITTSBURGH, DES MOINES and SANTA CLARA

Sales Offices at:

PITTSBURGH (25) . . . . 3412 Neville Island
NEWARK (2) . . . 215 Industrial Office Bldg.
CHICAGO (3) . 1216 First National Bank Bldg.
LOS ANGELES (48) . . . . 6399 Wilshire Blvd.
DES MOINES (8) . 913 Tuttle Street
DALLAS (1) . 1217 Praetorian Bldg.
SEATTLE . . . . . 520 Lane Street
SANTA CLARA, CAL., 619 Alviso Road

Another Example of Efficient Power at Lower Cost



In Glidden R.E.A. Cooperative, Glidden, Iowa, loads are carried by these two modern 1,650 hp Cooper-Bessemer LS-8 diesels, installed in 1948. Engines are equipped for either oil burning or Gas-Diesel operation.

How Glidden Can Make The Most of Oil OR Gas

The Glidden R.E.A. Cooperative, Glidden, Iowa, is an efficient, progressive organization — not only in building line loads, extending distribution and giving exceptional customer service, but also in taking advantage of the latest developments in equipment and power.

For example, they made no mistake when they added the two 1,650 hp Cooper-Bessemer LS-8 diesels shown above. Because of their size and efficiency, these modern engines now carry the plant's base loads, while six smaller, older diesels serve as fill-ins as load demands dictate. Now operating as oil-burning diesels, averaging about 14.3 kwh per gallon of fuel, the LS's are already fully equipped for even more economical *Gas-Diesel* operating, just as soon as gas becomes available.

Whatever your power needs call for — gas engines, diesels, Gas-Diesels — Cooper-Bessemers offer you the most advanced, money-saving features. Be sure to check up.

The Cooper-Bessemer Corporation

MOUNT VERNON, OHIO — GROVE CITY, PENNA.

New York Washington, D. C. Bradford, Pa. San Francisco Houston, Dallas, Greggton, Pampa and Odessa, Texas Seattle Tulsa Shreveport St. Louis Los Angeles Chicago Caracas, Venezuela Cooper-Bessemer of Canada, Ltd., Halifax, Nova Scotia Gloucester, Mass. New Orleans, La.

More Endorsements Of This Expansion Joint Material

Kapco fiberglas expansion joint which has been gaining acceptance throughout the country, now meets AASHO and ASTM specifications as well as Federal Specifications HH-F-341A, reports the Keystone Asphalt Products Co., Division of American-Marietta Co., 101 E. Ontario St., Chicago 11, Ill. The recently published ASTM Specification D-554-52T and AASHO Specification M-153-52 permit its use on state projects.

According to the company, this new product is non-rotting, as it is composed of inorganic glass fibers which are impregnated and bonded with bitumen. It is supplied in preformed strips faced with heavy asphalt saturated felt liners. Kapco fiberglas expansion joint is now available in widths up to 42 inches and in $\frac{1}{2}$, $\frac{3}{4}$, and 1-inch thicknesses.

For further information, write the manufacturer, or use the Post Card on the colored page in this section. Circle No. 24.

Lieut.-Col. W. P. Hersey Released from Active Duty

Lieutenant Colonel Winthrop P. Hersey, Army Ordnance Corps Reserve, returned to civilian life recently and resumed his duties as vice-president and general manager of the Hersey Mfg. Co., South Boston 27, Mass., manufacturer of water meters.

Lt.-Col. W. P. Hersey

Colonel Hersey served for 20 months on recall active duty as the Contract Administration Division and Assistant Contracting Officer of the Boston Ordnance District. During World War II he was on active duty with the Ordnance Corps for four years.

Dump Truck Features Greater Payload Capacity

Production of its new M-310 Dump Truck, featuring important innovations and improvements in dump truck design, has been announced by Cook Bros. Equipment Co., 1815 N. Broadway, Los Angeles 31, Calif., manufacturer of heavy-duty trucks and truck equipment.

Features of the new truck are greater payload capacity and easy maneuverability on the highway and on the job. According to the manufacturer, the massive yet compact chassis, scientific load distribution, single passenger cab adjacent to the engine, are all factors which work together to yield maximum payload and maximum maneuverability on shorter wheel base.

The massive yet compact chassis, scientific load distribution, and single passenger cab adjacent to the engine, are among the features of this new dump truck.

To increase total legal payload capacity, greater advantage has been taken of the load-carrying ability of the front axle, by shifting a portion of the payload weight to the front. A rugged heavy-duty front axle has been provided to absorb this greater weight, with safety margin to spare.

The truck is equipped with Cook Bros. hyraulically powered telescopic hoist. Safe, simple, and reliable in operation, the hydraulic principle eliminates heavy mechanical levers, arms, cams, and other parts subject to wear and failure.

Illustrated literature may be obtained by writing to the manufacturer, or by using the post card on the colored page in this section. Circle No. 33.

Here's Dual Economy—

HAYS DUO-STOP . . . Corporation Stop and saddle combined for installation on small service lines.

HAYS Main Drilling Machine . . . an economical device for drilling the main, through the Duo-Stop or other types of Corporation Stops.

These are only two of the hundreds of items in the complete Water Works line made by HAYS.

Write for literature or ask "The Man From Hays"

HAYS

Water Works Products

HAYS MANUFACTURING CO.
ERIE, PA.

Now all Philadelphia firemen get 2-way radio coverage from either the main station or the new auxiliary station.

Does your city need this protection?

New auxiliary station operates four 250-watt transmitters, two channels for police, two for fire.

Two easy-to-operate consoles route calls to fire and police apparatus all over Philadelphia.

New Philadelphia 2-way radio center controls police, fire, civil defense. Provides radio coverage for any emergency.

New station remote from downtown area

Philadelphia is a *safer* city now, thanks to a new RCA 2-way radio center recently established in West Philadelphia, four miles from the heart of the city. Acting as an auxiliary to the main control center at City Hall, this new installation will provide *emergency* 2-way communications with mobile police and fire units. It will also serve as control center for civil defense.

Two-station coverage gives double protection

Both the main station and this new auxiliary station operate on the same frequency. If one fails, the other takes over. So Philadelphia is assured of *extra* safety in emergencies. It's all typical of RCA 2-way radio at work . . . making things safer and more efficient wherever it's used.

Is your city protected by 2-way radio?

Radio coverage of police, fire, and emergency vehicles is almost mandatory in these troubled times. And even in day-to-day operations, it can quickly save your taxpayers far more than it costs.

RCA radio easy to install-operate-maintain

Look into RCA radio for 2-way coverage in *your* city. Mobile units are compact, lightweight . . . easy to install and maintain. Performance exceeds FCC requirements. Designed and backed by RCA, world leader in radio. Nation-wide service available through RCA Service Company.

Get full story for your city—now

RCA Engineering Products
Dept. 4M,
Camden, N. J.

Please send me your big, new, free, illustrated booklet, "RCA 2-way Radio for Public Safety."

Name_____

Position_____

Address_____

City_____ State_____

RCA RADIO CORPORATION of AMERICA

F. F. Osborne Joins Smith-Blair Staff

Smith-Blair, Inc., 535 Railroad Ave., South San Francisco manufacturer of water-works supplies, has recently announced the appointment of F. F. Osborne as general sales manager.

F. F. Osborne

Mr. Osborne brings to the organization more than 19 years of experience in the water-works engineering field.

He received his Bachelor of Science degree from Pomona College, and a Mechanical Engineering degree from the University of Southern California. His background includes nine years as sales engineer for two of the nation's largest pump manufacturers, Fairbanks-Morse and Byron Jackson companies. He served six years as a civilian employee of the U. S. Engineers, designing and supervising the installation of water systems in the Aleutian Islands. He has been an independent consulting engineer for several years.

Mr. Osborne's headquarters will be at Smith-Blair's main office and factory at South San Francisco. He will supervise the branch warehouse and sales organization of Smith-Blair at Downey, Calif., and the distributors and jobbers throughout the United States and Canada.

Smith-Blair, Inc., states it is the largest manufacturer of repair clamps, flexible couplings, and water-works specialities on the West Coast. It points out that it has been the leader in developing new products in the water-works field, and recently completed a large contract for a special clamp coupling for the United States Army Engineers.

Itemized Receipt Printer

An itemized receipt printing cash register, with a built-in adding machine feature, that can be used for any adding job, is offered by The National Cash Register Co., Dayton 9, Ohio. For further information, write the manufacturer, or use the Post Card on the colored page in this section. Circle No. 21.

Elected Vice-Presidents Of U. S. Pipe and Foundry

R. E. Garrett C. S. Northen

Claude S. Lawson, president of United States Pipe and Foundry Co., Burlington, N. J., announced that Charles S. Northen has been elected vice-president in charge of sales and a director, and Robert E. Garrett, elected vice-president and controller. Mr. Northen assumes the office held by D. B. Stokes, who is retiring after having been with the company for 42 years.

Mr. Stokes started with U. S. Pipe in 1910, and was successively salesman, sales agent, eastern sales manager, western sales manager, general sales manager, vice-president since 1926, and director since 1928.

Mr. Northen became vice-president in charge of sales for Avondale Mills in 1929. He left that firm in 1945 to become vice-president of sales of Sloss-Sheffield Steel & Iron Co.

Mr. Garrett has been with Sloss-Sheffield Steel & Iron Co. since 1929. He advanced through all departments of the accounting division and in 1945 was appointed executive assistant. In 1951 Mr. Garrett was made assistant to the president, in which position he had general supervision of accounting, purchasing, traffic and treasury departments of Sloss-Sheffield.

Underground Water Sources

The subject, "Underground Water Sources: Their Conservation, Protection and Use," was the principal topic for discussion at the semi-annual meeting of the National Association of Vertical Turbine Pump Manufacturers, 301 West Ave. 26, Los Angeles 31, Calif., held recently at the Roosevelt Hotel, New Orleans, La. The association is composed of the majority of leading manufacturers of vertical turbine pumps which are widely applied in the development of underground water supplies for municipalities, industry, and agricultural irrigation.

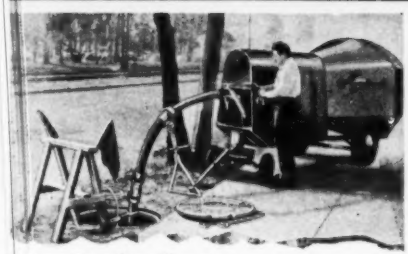
Leland C. Kimball, sales manager, Byron Jackson Co., Los Angeles, and retiring president of the association, reported on the organization's activities of the past year. Papers on topics of interest to the association and the pump industry were presented by: W. C. Mumford, manager, Vertical Turbine Pump Division, Worthington Corporation, Succasunna, N. J.; G. F. Twist, general manager, Peerless Pump Division, Food Machinery and Chemical Corp.; Charles E. Wilson, honorary director of the association; T. E. Woodruff, manager, Pump Department, Fairbanks-Morse & Co., Chicago, and H. E. Carloss, V. P. Deming Co., Salem, Ohio.

Election of association officers for the ensuing year of 1953 was also held. The new officers are: president, G. F. Twist of Peerless Pump; vice-president, T. E. Woodruff, Fairbanks-Morse, and secretary, B. A. Tucker, Peerless Pump.

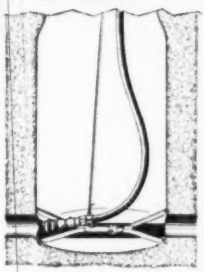
Among the prominent members in attendance at the New Orleans meeting were: Leland C. Kimball, sales manager, Byron Jackson; T. E. Woodruff, manager, Pump Department, Fairbanks-Morse & Co.; W. C. Mumford, manager, and Fenmore Dunn, assistant manager, Vertical Turbine Pump Division of Worthington Corporation; G. F. Twist, general manager, and B. A. Tucker, general sales manager, Peerless Pump; Charles E. Wilson, honorary director of the association, and H. E. Carloss, vice-president, Deming Co., Salem, Ohio.

Others present included: William H. Reeves, vice-president, Layne & Bowler, Inc., Memphis, Tenn.; Thomas W. Simmons, Jr., president, Johnston Pump Co., Pasadena, Calif.; Boyd Kern, president, Winthroath Pumps, Inc., Alhambra, Calif.; W. L. Bremer, vice-president, Layne & Bowler, H. Devoe Rea, executive secretary of the association.

"FLEXIBLE" *Exclusives* THAT *Revolutionized* SEWER CLEANING



Since 1932 FLEXIBLE has led in pioneering improved sewer cleaning methods and equipment. Here are today's most important "FLEXIBLE" musts!



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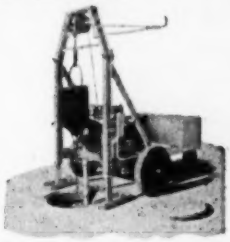
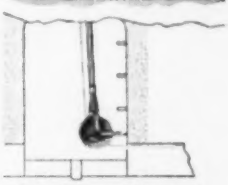
A mechanical marvel that does all rodding with one man and a helper. Pushes, turns, pulls . . . pulls back loads and "rods in" for more.





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Works loose brick manholes (any size) far faster. Fits any two leg bucket machine. Installs from above ground.

FLEXICROME ROD COUPLING

An improved coupling recommended for HIGH-SPEED POWER TURNING . . . developed through years of experience. Never connects in the wrong hole. Faster to assemble.

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can "take it"

More resistance to weather, corrosion and *vandalism* than any other sign can offer.

Developed by the Navy and the Air Corps for structural parts requiring unusual resistance to weather and stresses, Fiberglass-reinforced laminates have now been made available for traffic control signs.

With a tensile strength of approximately 20,000 pounds per square inch, DURASIGNS have the strength of steel with only one-third the weight. They cannot rust or corrode and, because the color is all the way through, they never need painting. **Yet they actually cost less than comparable steel signs.**

Available in white or yellow, blank or with your choice of copy. Regular or reflectorized surface. Write for details.

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ERIE, PENNSYLVANIA

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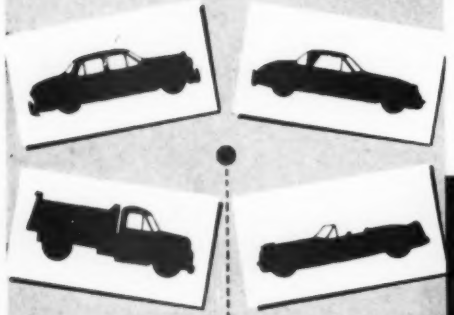
DIFFERENT NEEDS



Write for data to
THE KARPARK CORPORATION
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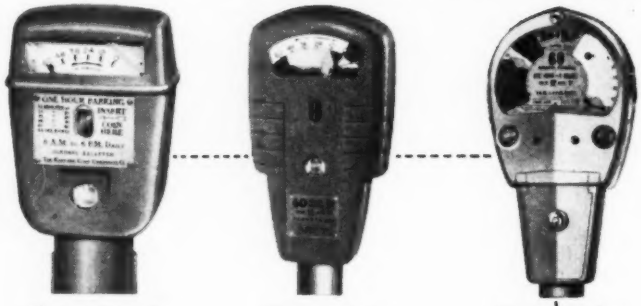

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Supreme in strength; in resistance to damage and vandalism.

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Makes Karpark dependability available at a minimum investment.

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One installation times two cars; has every wanted feature.

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KARPARK

A METER FOR EVERY PARKING NEED

The Adaptable UNIMATIC
Takes care of any parking situation—beautifully and efficiently.

St. Paul Hydraulic Hoist Sales Manager

The appointment of Leo M. Brown as sales manager of St. Paul Hydraulic Hoist, Minneapolis 14, Minn., has been announced by Frank J. Hasselman., division manager. Mr. Brown succeeds William F. Keeton, who resigned to enter business for himself.

L. M. Brown

Before joining Gar Wood Industries in 1949, Mr. Brown was a construction engineer for E. I. Dupont, and sales manager for Truck Equipment Co., St. Louis, Mo. His previous position before his present appointment had been as assistant sales manager at St. Paul Hoist, and as district manager, serving St. Paul distributors in the south central states.

St. Paul Hydraulic Hoist manufactures truck dump bodies and hoists, Dump It farm conversion hoists, Pax-All refuse loading bodies, Frate-Gate elevating end-gates, and truck patrol underbody maintenance blades.

New Eastern Plant For Beckman Company

Beckman Instruments, Inc., South Pasadena, Calif., manufacturer of scientific and industrial instruments and precision components comprising a line from pH meters to computers, has started construction on a new 20,000 square foot building in Mountainside, N. J.

The new plant will be of brick, one story high and will incorporate the latest design features for precision manufacturing. It will be used as eastern sales and service offices for the parent company and as an eastern manufacturing facility for the Beckman division. Helipot Corp., manufacturer of helical potentiometers.

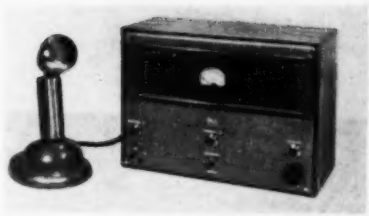
Remote Control Unit For Mobile Radios

A new remote control unit for use with mobile radio communication systems is announced by the Engineering Products Department of the RCA Victor Division, Radio Corp. of America, Camden, N. J. It is part of a comprehensive line of new and improved RCA two-way radio equipment intended to meet all needs of public safety and industrial users. The new unit is designed for use with RCA's Carfone and Fleetfone systems, and can be incorporated into all other mobile systems operating in the 30-50 or 152-174 megacycle bands.

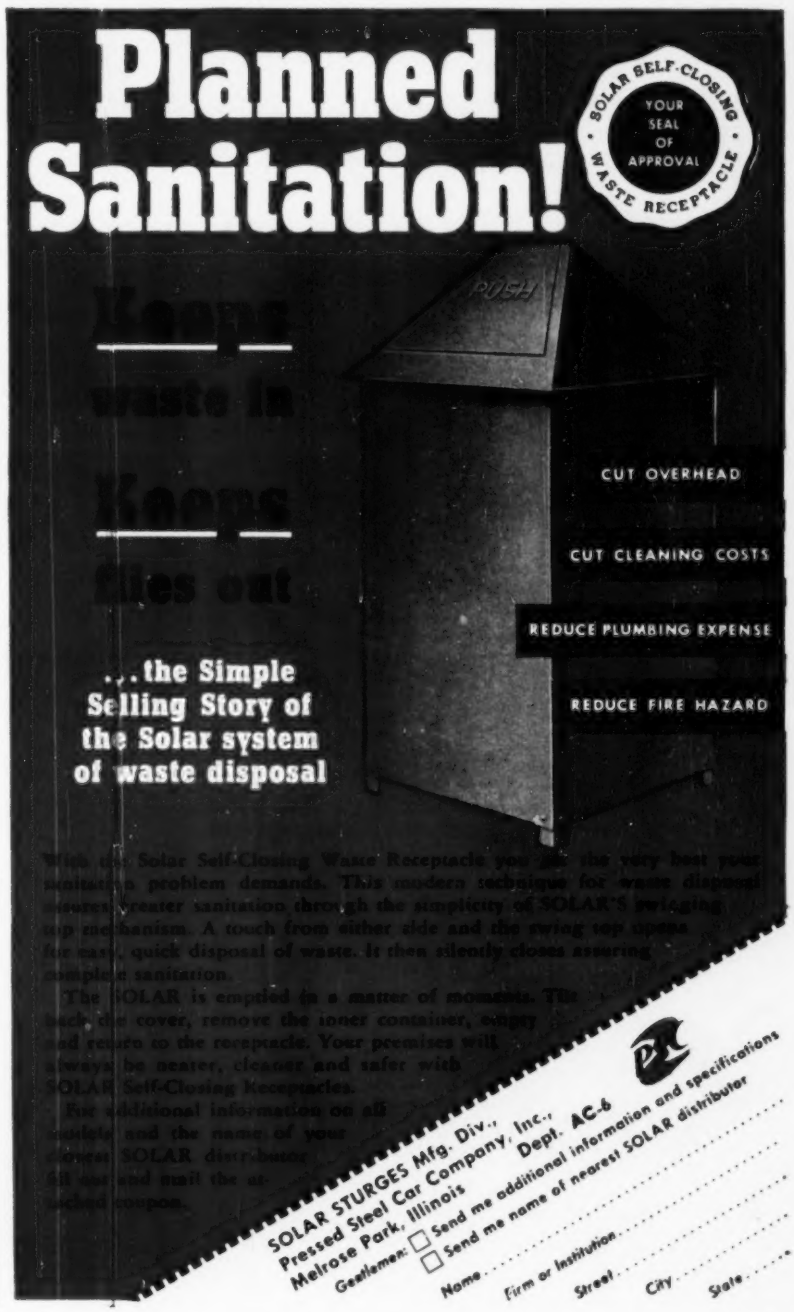
The RCA Type CC-8A consists of a speech amplifier, power supply, speaker amplifier, loudspeaker, and complete set of controls. Operating over a single pair of telephone wires, it controls a remote receiver and transmitter by a system of relays. Dual transmitter selection is provided. The manufacturer reports that satisfactory operation is accomplished over distances of 10 miles between the control point and the remote equipment.

The front panel contains a meter for monitoring line lever to prevent overmodulation. The panel also provides volume, dual transmitter frequency, and intercom controls. A two-position toggle switch permits use of either a dynamic or a carbon-type microphone. The CC-8A operates from 110-117 volts, 50 or 60-cycle power supply, and has a rated power consumption of 68 watts.

For full details, write the manufacturer, or use the post card on the colored page in this section. Circle No. 10.



A new remote control unit for mobile communications systems operating in the 30-50 or 152-174 megacycle frequencies.



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all-aluminum Standards and Brackets

High strength, seamless, tapered all-aluminum lighting and traffic signal standards and tapered elliptical brackets, originated by P & K . . .

PROVIDE:

RAPID, LOW COST INSTALLATION
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EXCEPTIONALLY HIGH STRENGTH
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LOWEST MAINTENANCE COST

(PHOTO OF N. J. TURNPIKE INSTALLATION)

P & K All-Aluminum Standards on New Jersey Turnpike, one of the world's busiest highways, serving an area of 11% of the nation's population and 35% of its industry.
P & K Standard used is one of many stock designs. Special designs available.

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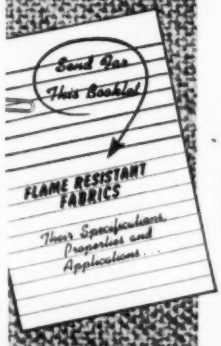
Awnings, Canopies, Temporary Structures

. . . *can't Blaze*



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Flamefoil canvas gives extra margin of safety against fires in congested areas. Added public protection when local governments require treated canvas for commercial installations.

Approved by the Underwriters' Laboratories of the United States and Canada, the Bureau of Standards and Appeals of the City of New York and the California Fire Marshal.

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Heads Market Research For Marlow Pumps

Alfred S. Marlow, Jr., president of Marlow Pumps, Ridgewood, N. J., announces the appointment of J. B. Diepenbrock, formerly West Coast district representative, as manager of a new marketing research department. Mr. Diepenbrock will coordinate research, engineering, and sales data gathered from markets and industries throughout the world.

J. B. Diepenbrock

Formerly associated with Ingersoll-Rand and Dow Chemical, Mr. Diepenbrock has had several years of Marlow field experience.

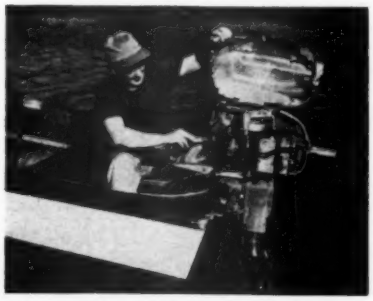
Mr. Marlow states that "the establishment of this new department has been brought about by the tremendously increased number of new pump applications opening up in present and entirely new markets."

Nine executives of Marlow Pumps completed thorough physical examinations at the Fanny Markel Medical Group in Ridgewood, N. J., recently. Following the practice of other leading commercial and industrial organizations, the pump company made the move to protect the health of its key men. The group was led by Alfred S. Marlow, Jr., president of the firm, which makes self-priming diaphragm and plunger pumps.

New Evinrude Outboard Motor

A new Auto-Life hood provides instant accessibility for routine inspection of the new 15-hp Super Fastwin outboard motor. It's as easy as opening the hood of your car, reports the manufacturer, Evinrude Motors, 4865 N. 27th St., Milwaukee 16, Wis.

The complete cover assembly may be lifted by removing two screws. This new Evinrude motor includes gearshift with neutral, forward, and reverse; Roto-Matic speed control, and separate six-gallon Cruis-a-Day gas tank. For literature, write company or use post card. Circle No. 6.



The new Auto-Life hood of this outboard motor provides instant accessibility for routine inspection.

THE NEW FISHER T-10 M-SCOPE IS A NATURAL

Here's Why:

★ Lightweight yet rugged construction.
★ Ease and simplicity of operation.
★ Reliable and economical performance.
★ Visual intensity meter as well as earphone for easy identification of metal objects.
★ Top quality material and construction throughout insured through a complete guarantee.

FISHER RESEARCH LABORATORY, INC.
Palo Alto California

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THE J. M. CLEMINSHAW CO.
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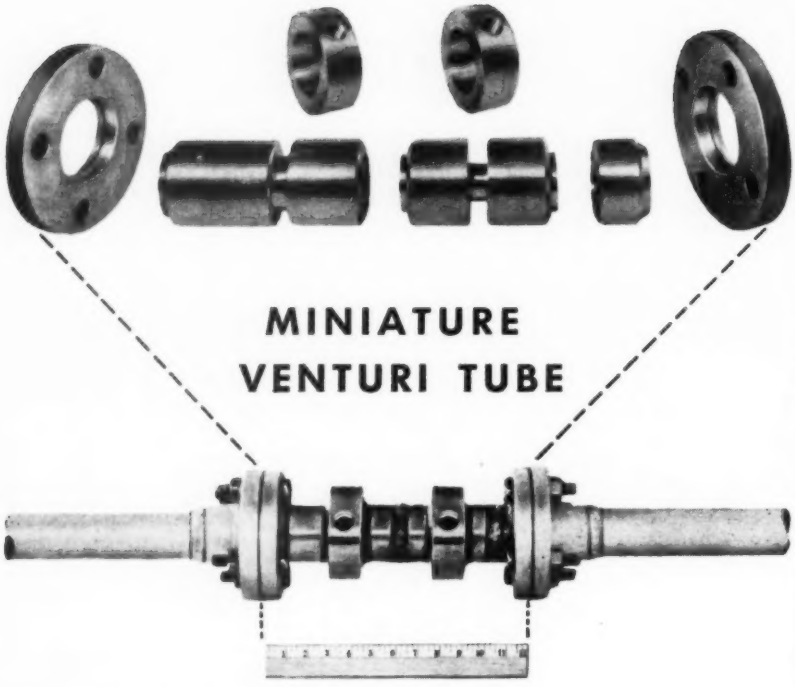

—SOLVES UNUSUAL PROBLEM

PROBLEM: Accurate measurement of low flow of a corrosive process liquid through 0.375″ pipe. Fluid under 20 p.s.i. gauge pressure at 50° F., has a specific gravity of 1.32. Maximum flow 158.6 lbs. per hour.

SOLUTION: Ready-made measuring devices were reviewed—advantages and limitations of each type noted. No standard device available to measure low flow accurately under corrosive conditions.

Called in specialist in measuring problems—Simplex sales engineer—and outlined difficult requirements.

RESULTS: Simplex designed and produced a tailor-made Venturi tube of welded stainless steel that resists corrosion. Interesting device—may well be smallest in industrial process use—throat diameter only .105″. Machining to .0005″ tolerance provides specified accuracy. Unit is simple, reliable, efficient . . . and accurate.

Consult Simplex on measuring devices of unique sizes tailor-made for your special applications, small or large.

For further information write to the Simplex Valve & Meter Company, Dept. 1, 6789 Upland Street, Philadelphia 42, Pa.

SIMPLEX®

VALVE AND METER COMPANY

New, Pull-Type Spreader

The Baughman Pull-Type Model SC abrasive and salt spreader has been redesigned and improved, according to Baughman Mfg. Co., Jerseyville, Ill. The new model, the SC-52, is now in production for prompt delivery, in time for use this winter.

The outstanding feature of the new model is the new lower location of the traction-powered distributor plate. On standard 3:50 by 6 tires, the plate is only 13½ inches above the ground. This assures an improved, road-hugging spread pattern with less rebound.

Other features include positive locking tow hitch as standard equipment; all-welded construction of heavy-gauge high tensile alloy steel; giant size rolled-edge hopper; adjustable agitator and valve to regulate flow of material to distributor; case hardened, adjustable, and renewable steel fins on distributor plate; heavy-duty oil-sealed gear case and Timken bearings.

The Model SC-52 will spread sand, salt, cinders, calcium chloride, chat, and chips, in a full 360° circle while running either forward or backward. By spreading under the wheels of the truck, traction is greatly improved on slippery surfaces. Spread pattern can also be controlled in width and direction (either right or left) by the adjustable deflector plates on both sides of the spreader, and by the angle of the distributor fins. For literature, write the company or use post card. Circle No. 16.

AMERICA'S
HEADQUARTERS
FOR
**FIRE EQUIPMENT
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W.S. DARLEY & CO.

ESTABLISHED 1908
CHICAGO 12, ILLINOIS

Asphalt Institute Elects Chairman and President

D. N. Myers B. E. Gray

The Asphalt Institute, 801 Second Ave., New York 17, N. Y., at the annual meeting of its board of directors, elected D. N. Myers, president of Byerlyte Corp., Cleveland, Ohio, as chairman of the executive committee for 1953, and reelected Bernard E. Gray as president. The directors represent the major part of the petroleum asphalt production industry of the United States and Canada.

Elected vice-presidents for the Institute's five U. S. geographical divisions were: Charles W. Else, The Southland Co. for Division I; P. C. Doyle, The Standard Oil Co., Ohio, Division II; Henry G. Groves, Farmers Union Central Exchange, Inc., Division III; D. D. Williamson, American Liberty Oil Co., Division IV, and Howard D. Webb, Envoy Petroleum Co., Division V. These vice-presidents together with Mr. Myers and Mr. Gray, and M. O. Huntress of Allied Materials Corp., ex-officio as retiring chairman, constitute the executive committee for the coming year.

Herbert Spencer was reelected secretary of the Institute; George R. Christie, Socony-Vacuum Oil Co., Inc., reelected treasurer, and John N. Smith, Socony-Vacuum Oil, assistant treasurer.

New Lightweight Miniature Transmitter

The Communications and Electronics Division of Motorola, Inc., 4545 W. Augusta Boulevard, Chicago 51, Ill., has announced initial mass production of a hand-sized Handi-Micro Talkie Transmitter designed to operate in the 152-174 m.c. frequency band. The compact unit, weighing only one pound, 13 ounces, has a power output of 20 to 40 multi-watts and a tested optimum range up to five miles.

Hand-sized transmitter, designed to operate in the 152-174 m.c. frequency band.

The complete transmitter, including self-contained dry batteries and microphone, is contained within a sturdy, seam-welded housing attractively finished with a gray automotive type baked enamel. Overall case dimensions are only $7\frac{3}{8}$ inches by $2\frac{1}{2}$ inches by $1\frac{3}{4}$ inches. A rigid, chrome-plated loop antenna doubles as the carrying handle.

Operation of the hand-held unit is extremely simple. To transmit, it is only necessary to press a button on the side of the unit. With the transmitter operated on the practical duty cycle of 15 seconds out of each five minutes, "A" battery life is one work week with the "B" batteries lasting two and a half weeks.

For further information, write the manufacturer, or use the post card on the colored page, in this section. Circle No. 19.

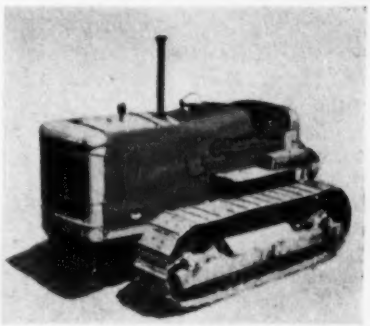
Rotary Cutter For Fighting Fire

According to John J. O'Brien, 32 Barker Road, Scituate, Mass., the O'Brien rotary cutter for fighting fire provides instant rescue, ventilation, and drainage; cuts $8\frac{1}{2}$-inch holes through basement floors in seconds, $8\frac{1}{2}$-inch openings through pier decks and walls in four minutes, and puts opening for distributor or cellar pipe exactly where you want it quickly.

Among its features are ventilation or openings for distributors or cellar pipes for instant drainage, ready portability and strength to meet all demands, carbide spur, replaceable cutters, and high-speed pilot drill. It can be operated from any building electrical outlet or from Homelite portable generators. The company will give an actual demonstration of its product without cost.

For further details, write the manufacturer, or use the post card on the colored page in this section. Circle No. 41.

Improved Heater For Crawler-Tractors



New heater for crawler-tractor is made of heavy weather-resistent canvas and framework of iron.

Operators get greater protection from the weather. Also tractor controls remain in a protected area when tractors are custom fitted with the new Comfort Heater. The custom details also allow for the use of popular crawler-tractor attachments. The new crawler-type model heater is made by the Comfort Equipment Co., 2609 Walnut St., Kansas City, Mo., major producer of heaters for farm-type tractors.

According to the manufacturer, the new models are individually fitted to each crawler-tractor model to funnel the maximum amount of engine heat to the operator's body in addition to keeping his legs and hands protected from the weather. The heaters are made of heavy weather-resistant canvas and framework of iron. Other special improvements include flaps for access to starting motor and oil sticks. There are no belly straps or ties under the tractor to snag on brush or other obstructions. Each model is equipped with fold-back motor panels for control of the engine heat to operator. Tension springs are used to keep the cover neat and prevent sagging when motor panels are folded back. Heavy plastic windshields are optional at additional cost.

For further information, write the manufacturer, or use the post card on the colored page in this section. Circle No. 2.

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McWANE Cast Iron Pipe Co.
Birmingham, Ala.
Pipe sizes 2" thru 12"

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Dallas, Texas, 3200 Maple Avenue

PACIFIC STATES Cast Iron Pipe Co., Provo, Utah
Pipe sizes 2" thru 24"

Sales Offices
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Los Angeles 48, 6399 Wilshire Blvd.
San Francisco 4, 235 Montgomery St.
Portland 4, 501 Portland Trust Bldg.
Salt Lake City, Waterworks Equip. Co.
Seattle, Wash., Smith Tower Bldg.

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you KNOW you get PPD*

PIN POINT DETECTION

MODEL 620
BOX & VALVE LOCATOR

Pin Point Detection of Goldak's Model 620, saves you time and money, with immediate location of Buffalo Boxes, Valves, Covers and Buried Metals.

Untiring operation, weighs only 8 lbs. Sturdily constructed, all-weather use. High quality parts assures maximum sensitivity, low operating and nominal replacement costs.

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*PIN POINT DETECTION

write for **FREE** literature and name of nearest dealer

The name GOLDAK, on electronic instruments, eliminates guesswork . . . your assurance of Pin Point Detection at all times, in any kind of weather. Throughout the world, with companies who need instruments that are accurate and durable, first choice is GOLDAK.

MODEL L46
SENIOR LEAK DETECTOR

Detect costly leaks in water and low viscosity fuel lines, in their exact position. Completely portable, simple to operate. Latest electronic improvements and high quality parts, assures unequalled performance. Save time and labor, eliminate costly leakage with Goldak Model L46.

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The GOLDAK Company
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Dependable because they are tough and rugged. Made to withstand the wear and tear of the modern day strain and stress. For generations of incomparable service, only cast iron pipe can qualify. Serving the industry with Super de Lavaud Cast Iron Pipe, centrifugally cast in modern lengths.

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The New *Scythette* POWER SCYTHE

CUTS WEEDS, GRASS, REEDS 4 TIMES FASTER THAN ORDINARY METHODS

NEW POWER • NEW ENGINEERING

Now equipped with double power, double fuel capacity. Trims weeds on rocky or uneven ground. Cuts grass or weeds close to buildings. Clips reeds or underwater growth. Cuts with ease wherever a man can walk, wade, or row a boat. Equipped with new two h. p. motor, one quart capacity gas tank, 20-inch oscillating cutter bar. Weighs only 26 pounds.

a twist of the wrist and the SCYTHETTE becomes the *Sawette*

America's most revolutionary chain saw cuts trees, or any growth up to 6" in diameter, level with terrain while operator is in upright position.

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RICHMOND, INDIANA

President of Steel Construction Institute

John E. Jackson, president of Pittsburgh-Des Moines Steel Co., 3412 Neville Island, Pittsburgh 25, Pa., is the new president of the American Institute of Steel Construction. An institute board member since 1947, Mr. Jackson had served as first vice-president of the organization for the preceding two years. As president, he succeeds R. D. Wood, chairman of Mississippi Valley Structural Steel Co., Chicago.

J. E. Jackson

Mr. Jackson has been president of Pittsburgh-Des Moines Steel since 1939. He joined the company as a construction engineer in 1924 and served in departments of the firm's fabricating and sales activities.

Street and Traffic Signs

A "Manual of Street Name Signs, Warning Signs and Construction Signs in Lifetime Porcelain" will be sent free to municipal officials by U. S. Porcelain Enamel Co., Los Angeles 22, Calif. The many signs are described, not only in specification data, but in actual color legend and appearance as well.

They are the 97 regulatory, warning and road signs adopted by the California Division of Highways. Dimensions and specification number are given for each sign.

The manual points out that the most legible daytime sign is a solid white letter on a black background. For night visibility, the Scotchlite signs are recommended, with emphasis on wide-angle Scotchlite. Complete specifications are given for six designs of street name signs: the most popular, the most economical, heavy-duty, the strongest, and two others of the same type.

For a copy of the manual, write the company, or use the post card on the colored page in this section. Circle No. 27.

Side Dozer Cleans Under Guard Railings

Huber Mfg. Co., Marion, Ohio, announces the Huber Side Dozer. Mounted on the firm's 42½-hp Huber Maintainer, the side dozer is designed for scalping berms and shoulders under guard railings, a job which heretofore has been done by hand operations.

The side dozer is hydraulically powered for removing sod, gravel, and other accumulated debris under railings. It is mounted on the blade suspension system of any existing Huber Maintainer. The cutting blade is made of high carbon steel, is 48 inches long, six inches high, and a half-inch thick, and is designed to scrape cleanly and efficiently under any guard railing clearing the ground by six inches.

The side dozer becomes the tenth attachment for the maintainer, which is basically a road maintenance machine with standard blade. Other attachments include: bulldozer, lift loader, berm leveler, road planer, highway mower, patch roller, broom, and one-way and two-way snow plows.

The company also announces the appointment of E. F. Edson Co. of West Springfield, Mass., and Contractors Equipment Co. of Atlanta, Ga., as distributors of its equipment. Edson is located at 716 Union St., West Springfield, Mass.. E. F. Edson is manager of the firm. W. W. Burch is president of Contractors Equipment Co., located at 916 De Kalb Ave., N.E., Atlanta.

For information on the Huber Side Dozer, write the manufacturer for Bulletin No. M-155, or use the post card on the colored page in this section. Circle No. 9.

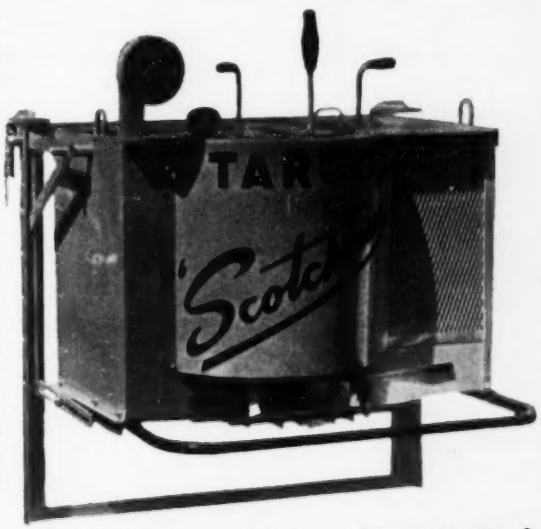
New Huber Side Dozer scalps berms under guard railings. The maximum reach is six feet.

SAVES AS IT SALTS

1. You get MOST "mileage" from your winter maintenance dollar.
2. You get FASTEST ICE & SNOW CONTROL at LEAST cost.

When you use the "Scotchman" spreader and straight de-icing salts — the MACHINE and the METHOD proven BEST.

YOU SAVE: *Time* because the "Scotchman" is 8 times faster than sanding or cindering. *Money* because "Scotchman"-applied salt is up to 50% cheaper. *Lives* because you can provide safe, bare pavements much faster.



Literature? ***Dealers in every snow state.*** ***Demonstration?***

TARRANT MFG. CO., East Ave., Saratoga Springs, N. Y.

FOR RENT
Sewer Cleaning Equipment

Thomas Drain Service
Home Office - 35 S. College St., Akron 8, Ohio
Collect Phone Calls Accepted
Call BLackstone 2212 Akron, Ohio

- **Most municipalities are not equipped to cope with the problems presented by their sewers, the cost of sufficient equipment to maintain the sewers is prohibitive.**
- **We will rent this equipment to you, and supply a man to supervise its operation.**
- **May we tell you more about this economical method of sewer maintenance?**

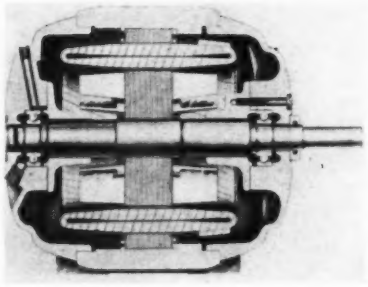
Totally Enclosed Motor Is Self-Cooling

A new totally enclosed motor has been developed by U. S. Electrical Motors, Inc., designated as Type SS. It is designed for services where dampness, dust, fire hazards, and corrosive fumes are prevalent. Because of its construction, Type SS is self-cooling. This eliminates the use of an exterior fan and any unsightly, heat-dissipating fins. The smooth exterior lends itself to wiping off or hosing down. The motor is provided with a slinger to protect the output shaft bearing against the entrance of dirt or water.

This motor, also available in Type SES, has been approved for explosion-proof service in hazardous locations by the Underwriters' Laboratories, Inc., and bears the official label.

These new motors are immediately available in a range from ⅓ to 2 hp (also fan-cooled to 75 hp) and will later be produced in larger ratings. Among the features are sealed terminal chamber, asbestos-protected windings, solid centricast rotor, Lubriflush bearings, which provide an extra large lubricant chamber, and provision for forcing the grease through the bearing for a thorough purge of the old grease.

For a copy of Bulletin No. 1784, write to U. S. Electrical Motors, Inc., Box 2058, Terminal Annex, Los Angeles 54, Calif., or use the post card on the colored page in this section. Circle No. 11.



Cross section of totally enclosed motor which is designed for service where dampness, dust, fire hazards, and corrosive fumes are prevalent.

Quad-O-matic

FOR GARBAGE AND RUBBISH PICK-UP

Cities from coast to coast have discovered the economies of the bigger, advance design all-aluminum "QUAD".

Your communtiy can save money, too.

FASTER LOADING! FASTER DUMPING!

20% GREATER CAPACITY

•

PRACTICAL "CENTRIFUGAL" PACKING

As loaded bucket reaches top it swings over with extra force, pitching contents down on accumulated refuse. This repeated crushing, packing action by each dumping bucket assures a solid maximum load.

Some good territories still open for representation

EQUIPMENT MFG. INC.

21550 Hoover Road

Detroit 5 • Michigan

WRITE FOR COMPLETE INFORMATION

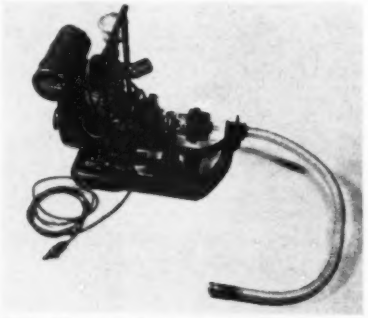
Electric Eel Cleans Sewers and Waste Lines

Sewer, wasteline, and field tile cleaning—where electric power is not available—is an easy chore for the new gasoline engine powered Electric Eel. Made by the Ohio Tool and Engineering Co., 131 N. Spring St., Springfield, Ohio, it cleans out roots, stones, and debris in one speedy, thorough operation, saves time and money, and eliminates all digging.

Weighing only 66 pounds for easy portability, the Eel is designed to clean pipe 1¼ inch in diameter and larger, and has sufficient power to handle 300 feet of cable. The 1½-hp gasoline engine is back geared 6 to 1, has an instantaneous kick-out, and an adjustable friction clutch between the engine and the cables.

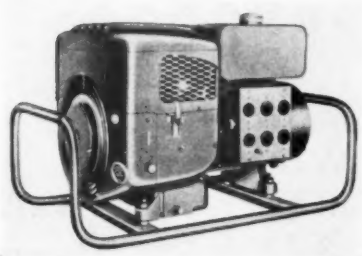
This new model also features a flexible connection for joining cables which eliminates breakage at end of fittings. The heavy-duty type is actually a double cable—consisting of a rotating inner and a stationary outer cable. It eliminates the possibility of injury to the operator in case of breakage, steps up efficiency, and makes it impossible to lose broken cable in the line.

For complete information, write the Ohio Tool and Engineering Co., 131 N. Spring St., Springfield, Ohio, or use the post card on the colored page in this section. Circle No. 18.



This Electric Eel is designed to clean pipe 1¼-inch in diameter and larger, and has sufficient power to handle 300 feet of cable.

5,000-Watt, 180-Cycle Electric Plant



This gasoline engine driven electric plant is designed to operate high frequency electrical work tools.

A new, 180-cycle, gasoline engine-driven electric plant, designed to operate high-frequency electrical work tools, has been announced by D. W. Onan & Sons Inc., 7651 University Ave., S.E., Minneapolis 14, Minn. At unity power factor it provides 5,000 watts of a.c., 230-volt, 180-cycle, 3-phase power or 3,000 watts, 230-volt, 180-cycle a.c. plus 2,000 watts, 115-volt d.c.

Model 5CK-185M provides independent power for 180-cycle electric tools where no standard power is available for conversion. The unit is portable. It is powered by the lightweight Onan CK two-cylinder, 4-cycle, air-cooled gasoline engine. Standard equipment includes a mounted 4½-gallon fuel tank and a carrying frame. The unit is manually started.

In addition to operating 180-cycle electric tools, such as saws, drills, and grinders along with other standard universal motor tools, the plant will provide power for lights for night or emergency operations as well.

For complete information, write for Form A288 from the company, or use the post card on the colored page in this section. Circle No. 38.

Airless Blast Cleaning For Water Meters

Airless blast cleaning has been employed with a high degree of success for removing rust and corrosion from water meter parts during reconditioning, reports the American Wheelabrator & Equipment Corp., 1350 S. Byrkit St., Mishawaka, Ind. It quickly scours every trace of rust and corrosion from the metal parts and leaves a matte-type surface on the work which makes the meters look like new.

Inspecting a load of water meters after cleaning in Wheelabrator Tumblast.

A piece of equipment commonly used for this work is a Wheelabrator Tumblast with a 2-cubic foot barrel capacity. One eastern reconditioner using such a machine is able to clean typical loads of 20 of the ⅝-inch size meters in approximately 15 minutes per load, so that at least 40 per hour or 320 per 8-hour day are cleaned with ease. The machine will accommodate loads of larger sized meters also.

The unit has a continuous rubber apron-type conveyor belt which forms the blast chamber. The belt conveyor continually draws pieces up from the bottom of the barrel load and cascades them over the top of the load where they are subject to the cleaning action of metallic abrasive thrown centrifugally by a rotating bladed wheel in the roof of the cabinet.

Descriptive literature on the equipment is available from the company.

For further information, write the manuacturer, or use the post card on the colored page in this section. Circle No. 35.

IF YOU HAVE EXPERIENCED

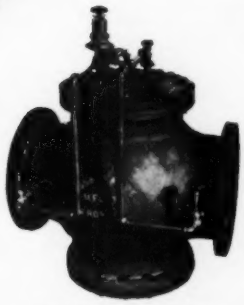
Water Shortage—Surge—Unnecessary Waste

INSTALL ROSS VALVES FOR CONTROL OF WATER STORAGE, SUPPLY CONDUIT AND DISTRIBUTION PRESSURES

PRESSURE REDUCING VALVE

ROSS SINCE 1879

MANUFACTURERS OF AUTOMATIC HYDRAULIC CONTROL VALVES AND SPECIALTIES



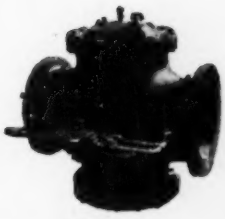
SURGE RELIEF OR BACK PRESSURE VALVE

OTHER ROSS PRODUCTS:

FLOAT VALVES
STRAINERS

HYDRAULIC BOOSTER PUMPS FOR CHLORINE FEED

HYDRAULIC AND ELECTRIC CONTROLLED VALVES



ALTITUDE VALVE

ROSS VALVE MFG. CO. INC.

8 Oakwood Ave. Troy, N. Y.

Mak-A-Sign Kit No. 3, illustrated above in use in Asheville, N. C., operates with spray gun attached to spark plug hole of auto motor. Comes complete with assembly frame, layout frame, letter file-case, 93 letter-plates, strap and spray gun.

Asheville Makes Own Street Signs

READ THIS LETTER from Charles W. Dermid, Director of Public Safety of world-famous mountain resort.

CITY OF ASHEVILLE
Asheville, N. C.

September 30, 1952

Mak-A-Sign Company
Birmingham, Alabama

"We have used Mak-A-Sign equipment (Kit No. 3) for the past 18 months in lettering street names on reinforced concrete posts.

"We have found the equipment convenient to maintain, easy to use, very economical and very satisfactory. It is so simple that a school boy could apply the name to the post by the use of Mak-A-Sign Equipment.

"We will be glad to recommend the use of this equipment to any other city."

(Signed) Charles W. Dermid, Director,
Public Safety Department

•

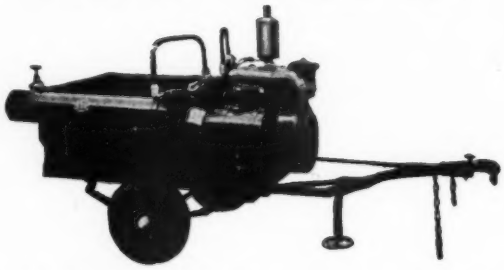
Write for Descriptive Literature

MAK-A-SIGN COMPANY
P. O. Box 2290 **Birmingham, Alabama**

IF YOU WANT - - - A COMPRESSOR that

- **IS REALLY PORTABLE**
- **ONE MAN CAN EASILY OPERATE**
- **WILL RUN A BREAKER OR DRILL**

then you want the LINDSAY MODEL 33



The Lindsay Model 33 is a ruggedly constructed, really portable air compressor with ample power to run a 30 to 35 pound paving breaker or rock drill. Two to four operating crews can each be equipped with a Model 33 for the price of a single large compressor.

One man can easily operate or move this compressor about on the job. Routine jobs for the Model 33 are opening service trenches, altering curb stones, cutting around catch basins, drilling blasting holes in rock or ledge, and other auxiliary type jobs. Write for details.

P. K. LINDSAY COMPANY
97C Tileston St. **Everett 49, Mass.**

Flame Failure Safeguard

Combustion Control Corp., 720 Beacon St., Boston 15, Mass., introduces to the combustion field, Firetron scanner Type 48 PT1 which provides flame failure protection for gas, oil, pulverized coal or combination fuel burner installations. The equipment guarantees instantaneous burner shutdown in the event of flame failure, thus providing a positive and immediate safeguard against the important and ever-present explosion hazard.

Scanner Type 48PT1 is used in conjunction with control type 26SJ5 for the protection of manually ignited burners and with programming control type 26RJ8 for the protection of automatically fired installations.

The eye of the scanner is the Firetron, a revolutionary development in the combustion industry. The Firetron is a photoconductive cell highly responsive to infrared. With its associated electronic circuits, it distinguishes between the infrared of a flame and that of other sources of infrared.

According to the manufacturer, Firetron is the only flame failure safeguard which sees all flames—oils, gas, puverized coal.

For detailed information, write for Bulletin CP511 from the company, or use of the Post Card on the colored page in this section. Circle No. 5.

YOU'RE INSTALLING THE BEST WHEN YOU INSTALL "BUFFALO" VALVE BOXES, METER BOXES & MANHOLE COVERS.

New Designs Interchangeable with Previous "Buffalo" Models!

"Buffalo" Valve boxes, extension boxes, roadway boxes, meter boxes and manhole assemblies for both water and gas have become the "standard of comparison" in many of our larger municipalities. Years of perfect service—constantly improved designs which are interchangeable with older models—and the country's finest service keep "Buffalo" constantly in the lead.

Whatever your needs—write, wire or phone to "Buffalo" first! Write Dept. J. for Bulletin M11. Complete Gray Iron & Non-Ferrous Commercial Casting Facilities for all special municipal & industrial requirements! Quotations gladly given!

3 pc. screw type adjustable 5¼" valve box.

BUFFALO PIPE & FOUNDRY CORP.
BOX 55—STATION B DE. 6764 BUFFALO, N. Y.

Higher Pressure with a smaller engine

ROSCO
MINNEAPOLIS

STREET FLUSHER
MODEL MTA

ROSCO FLUSHERS are delivering 60 pounds pressure with a 4 cylinder engine, whether you use 3 or 4 nozzles. That's because the engine and pump are integrally mounted and matched to assure an ultimate delivery ratio between horse power and pump capacity. These higher pressures with a smaller engine will lower your Street Flushing costs.

YOU'LL FIND TOO, that Rosco's careful attention to design details results in a streamlined Flusher that your city will be proud to own.

THERE ARE MANY MORE BENEFITS that your Rosco Dealer will be glad to show you. Ask him for prices or write to the factory. *Standard Models in 1200, 1600 or 2100 gallon capacities.*

MODEL MTA WITH CANOPY TOP

ROSCO MANUFACTURING CO.
3118 SNELLING AVE. • MINNEAPOLIS 6, MINN.

Ferro street signs give you VISIBILITY — PERMANENCE

A welcome sign is "Ferro"—the instant answer to the question: "Where Are We?" Clean, clear, permanently brilliant "Ferro" signs are genuine porcelain enamel fused on finest quality steel. Embossed. **Always** easy to read.

Nationally known, tested, **proved** "Ferro" signs on any street, road or highway are **the sign of good government.**

Write today for full details.

FERRO ENAMELING CO.
1100—57TH AVENUE **OAKLAND 21, CALIF.**

White Heating Kettles Have Fire-Proof Tops

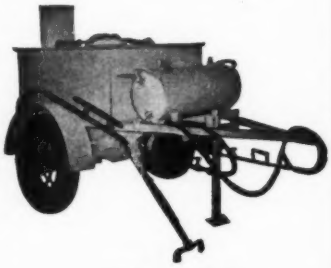
Cut-back and highly inflammable road repair material can be heated safely in White kettles. FIRE-PROOF top reduces fire hazard.

White asphalt and tar kettles are extensively used. They give long life and satisfaction.

Plain kettles or with hand or engine driven spray pumps for patching pavement. Thermometer, barrel hoist, warming hood extra. All oil burning. Semi-elliptic springs, pneumatic tires.

65, 110, 165, 220, 300 gallon capacities.

Model F-10 is oil jacketed, to heat elastic joint filler.



Other Products

CONCRETE VIBRATORS
Gasoline Engine and Electric Motor Driven Models

FRONT END LOADERS
for Industrial Tractors

ASPHALT PLANTS
Portable—Stationary

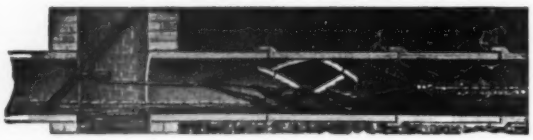
KEROSENE TORCHES
3 to 20 gal. capacities

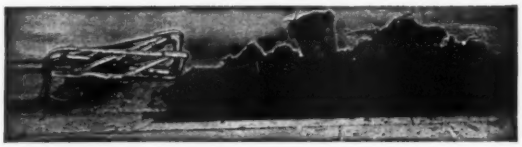
Write for Circulars and Name of Nearest Dealer

White Mfg. Co.

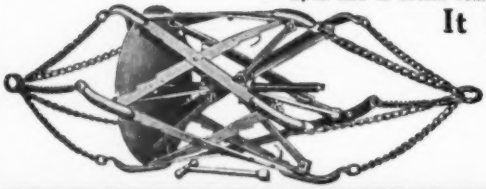
ELKHART 1 **INDIANA**

EXPANDING ROOT CUTTER & SEWER CLEANER





Open and in action removing roots and caked sediment like this.



It Fits in on Every Sewer Cleaning Job

Adjusted in 30 seconds to fit any sewer from 8 to 30 inches.

Will clean the entire sewer wall, top, and sides as well as the bottom, cutting and removing the roots and caked sediment, putting the sewer system in almost 100% clean condition.

Write for our new catalog on complete sewer cleaning equipment.

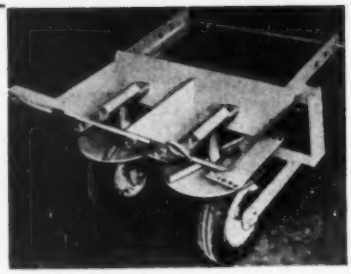
EXPANDING SEWER MACHINE COMPANY
108 East Walnut St. **Nappanee, Ind.**

Twin Spreader Model "T"

Sand Spreader for Seal Control and Ice Control

Check these features:

1. **Variable speeds of individual discs.**
2. **Two spinners.**
3. **Large double hopper.**
4. **Low dumping height—23 inches.**



Write for Bulletin N, also for Bulletin N-1 describing Model "B" Hydro Spreader, the all-purpose spreader for ice control, seal coating and lime spreading.

CENTRAL ENGINEERING COMPANY, Inc.
4429 West State St. **Milwaukee, Wis.**

"GUNITE" CONCRETE (Since 1915)

SPECIALISTS IN CEMENT GUN WORK

RESERVOIR LININGS (NEW AND OLD) • CONCRETE AND MASONRY REPAIRS • STEEL ENCASEMENT • FIREPROOFING • STEEL COAL BUNKER, STACK, HOPPER, AND PLATE LINING • SEWER LINING AND REPAIRING • CANAL, DITCH, AND DRAIN LINING.

GUNITE CONCRETE & CONST. CO.
1301 Woodswether Road **Kansas City 6, Missouri**

See our catalog in Sweet's

District Branch Offices
Paul B. Watts, 228 N. La Salle St., Chicago 1, Ill.
George R. Lewis Co., 2036 Queen Avenue So., Minneapolis 5, Minn.
B. H. Mueller Co., 6425 Delmar Blvd., St. Louis 5, Mo.
Ole K. Olsen Co., 823 Perdido St., New Orleans, La.
Philip D. Barnard, 2036 Addison, Houston 5, Tex.
Western Steel Prod. Co., 1755 W. 13th Ave., Denver 4, Colo.

Heavy-Duty Trencher for Digging

This trencher, operates through roots and rocks.

The Blackhawk Trench Hog made by Arps Corp., is equipped with special cutters for digging in frozen ground or hard soils. It is employed by contractors, utilities, municipal and state governments and custom workers.

There is a choice of three sizes of booms, furnishing depth capacities of 3½, 5½, and 7 feet. Cutters are furnished in widths of 6 through 20 inches and can be quickly changed for various trench widths. Depths are accurately controlled by hydraulic hand pumps or power pump. Independent speed control for each driver wheel insures exact regulation for straight line trenching.

It digs from 350 to 800 feet per hour depending upon width and depth. The Blackhawk digs up to 1,200 cubic feet per hour at a cost of from $4 to $6.

Standard cutters are furnished in widths of 6 through 20 inches, in increments of 2 inches. They can be quickly changed for digging various widths. Super-service cutters are supplied in width of 7 through 18 inches.

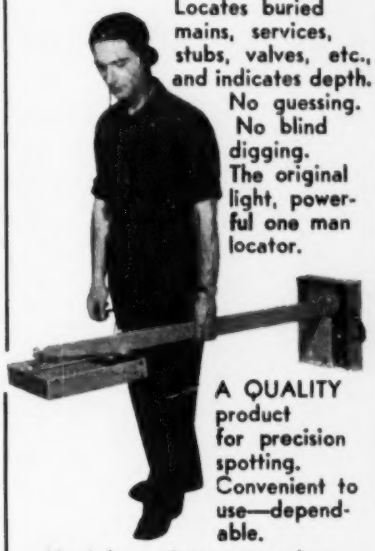
Among the accessories for many different jobs are power pump, 4-foot bulldozer, tiling and standard crumbers, and high-speed and power sprockets.

Also made by Arps Corp., New Holstein, Wis., are dual-action dozers for Ford and Case VA and VAI tractors, and half-track for Case VA, VAC, VAI tractors, Allis-Chalmers B and CA and Ford tractors.

The powerful, multi-use dual-action dozer has blade lifts to a height of 16 inches, and it can be conveniently tilted to left or right, is furnished in 4, 5, and 6-foot sizes, and may be angled in 5 positions. The rugged, all-steel half-truck has self-cleaning lugs to prevent clogging with dirt or snow, is built for extreme heavy-duty service and is furnished in 13 and 16-inch widths.

For descriptive literature, write the manufacturer, or use the Post Card on the colored page in this section. Circle

THE
WILKINSON
LINE LOCATOR



Locates buried mains, services, stubs, valves, etc., and indicates depth. No guessing. No blind digging. The original light, powerful one man locator.

A QUALITY product for precision spotting. Convenient to use—dependable.

Used by utilities everywhere

Wilkinson Products Company
3987 Chevy Chase Drive
Pasadena 3, California

DIRECTOR OF PUBLIC SERVICE WANTED

City of Willoughby, Ohio is interested in appointing a full time Director of Public Service. Applicant should be a Civil Engineer.

Application should include schooling, experience, former employers and starting salary required.

All inquiries will be held in confidence.

Address all correspondence to:

Jack Easton, Mayor
Municipal Building
Willoughby, Ohio

SAVE up to 85% brush handling costs.

This new M & M brush grinder rapidly converts 7 truckloads of brush into one truck load of chips.

Save on labor costs . . . truck operating costs. One man feeds brush or branches up to 6" in diameter into the Brush Grinder where they are chewed into small uniform wood chips and automatically blown into a truck or spread on the ground. The new M & M Brush Grinder is a portable unit with its own power plant. It hitches to jeep, car or truck for transportation right to the job. Safe easy operation with all moving parts fully enclosed. Nearly 100 years of experience in building fine grinding equipment is your assurance of long dependable service from an M & M brush grinder. WRITE FOR ILLUSTRATED FOLDER TODAY.

71 **MITTS & MERRILL** • 1003 S. Water St., SAGINAW, MICHIGAN

How Mr. Tuggleby Bought a mimeograph...

THE TIME HAD COME for Mr. Tuggleby to buy a mimeograph—a mimeograph to make sharp black-on-white copies of bulletins, reports, forms, and a host of other things.

But Mr. Tuggleby was a cautious soul . . . and so he did a cautious thing. He made a thorough investigation. As a result he learned of new ways to save time and money—and to the complete satisfaction of his secretary.

If you have similar need we would like to send a free copy of the booklet, "How Mr. Tuggleby Bought a Mimeograph." The book itself is a sample of MODERN mimeographing. Simply mail the coupon below.

For use with all makes of suitable stencil duplicating products.

A·B·DICK
THE FIRST NAME IN DUPLICATING

A. B. DICK COMPANY, Dept. AC-153-M
5700 Touhy Avenue, Chicago 31, Illinois

Without obligation please send me a copy of the booklet, "How Mr. Tuggleby Bought a Mimeograph."

NAME_____ POSITION_____

ORGANIZATION_____

ADDRESS_____

CITY_____ ZONE____ STATE____

District Sales Manager For Rockwell Mfg. Co.

L. A. Dixon, Jr., vice-president, Meter and Valve Division, Rockwell Mfg. Co., Pittsburgh 8, Pa., reports the appointment of R. A. Johnson as Atlanta district sales manager.

R. A. Johnson

Mr. Johnson will be responsible for the coordination of all Meter and Valve Division sales in the Atlanta District which covers Southeastern United States. He will report directly to J. W. Northcutt, regional manager, who is responsible for the southeastern territory from Virginia to Louisiana.

Mr. Johnson joined Rockwell in 1939 as a sales engineer and held several positions prior to his recent appointment.

Machine Cuts Costs Of Cutting Brush

According to the Brushmaster Saw Co., Inc., 290 West St., Keene, N. H., its new lightweight Brushmaster machine cuts the costs of cutting brush.

Operated by one man, the machine will cut as much brush in a given period of time as six good hand cutters. It is effective on briars, brambles, vines, brush, and on stout saplings up to 4 inches in diameter.

Among its features are: air-cooled, two-cycle motor, circular saw blade that can be replaced quickly, angular bar which prevents operator from moving into blade, engine throttle located at the hip for quick engine control, and an automatic clutch which disengages the saw when the engine is idling.

The Brushmaster is suitable for municipalities, utility companies, contractors, arborists, and highway departments.

Further details may be had from the manufacturer, or use the post card on the colored page in this section. Circle No. 4.

New lightweight sawing machine cuts through sapling which is 4 inches in diameter.

New Type Cast Iron Pipe Shows Great Strength

Improved cast iron pipe is one of the uses of this newly developed Ductile Iron.

What many metallurgists believe is the most outstanding foundry development since Seth Boyden first made the American type of malleable iron in 1820, is the discovery of how to make a cast iron which is so ductile it can be bent, twisted, and otherwise deformed without fracture, and which has several times the strength of ordinary gray iron.

Known as Ductile Iron, it was developed after many years of research at the Bayonne Research Laboratory of The International Nickel Co., 67 Wall St., New York, N. Y., to whom the patents have been issued.

Bridging the gap between ordinary gray iron and cast steel, Ductile Iron is being found the end goal of a search foundrymen have been making for generations, the company states. Its outstanding strength as well as ductility, in addition to exceptional resistance to shock, is especially useful throughout the industrial world.

One important use of Ductile Iron is in the manufacture of an improved pipe for city water and other lines. Pipe, 8 inches in diameter, 18 feet long, with a wall section of .42 of an inch, was cast as readily in Ductile Iron as in gray iron.

Gray iron pipe failed hydrostatically at a pressure of 2,400 psi and shattered into a large number of pieces when it burst. Ductile Iron pipe expanded under pressure and developed a pronounced bulge in one zone, Failure finally occurred at a pressure of 5,300 psi in the form of a longitudinal crack along the bulge and with no shattering. It is probable that use of Ductile Iron pipe now will be permitted for the transmission of fluids and gases now barred to gray iron because of lack of ductility.

For further information, write the company, or use the post card on the colored page in this section. Circle No. 22.

John R. Barnes Dies

John R. Barnes, representative of the Neptune Meter Co., 50 W. 50th St., New York 20, N. Y., in the State of Iowa, died on Nov. 13 at the age of 57. He had been ill for some time. Surviving are a brother, Floyd E. Barnes, and a sister, Faye Barnes Rickey.

A resident of Oskaloosa, Iowa, Mr. Barnes had been employed by Neptune since January 1924, and was one of the original staff of the company's Kansas City office.

. . . for SAFE, SURE gas utilization

SEWAGE SLUDGE GAS SAFETY EQUIPMENT

Completely eliminate fire and explosion hazards! P.F.T. gas safety equipment includes: waste gas burners, flame traps, pressure relief units, gas pressure regulators, pressure gauges, condensate and sediment accumulators. Write for Bulletin 221 for complete details!

P.F.T. PACIFIC FLUSH TANK CO.

Waste Treatment Equipment Exclusively Since 1893

4241 RAVENSWOOD AVE. CHICAGO 13, ILLINOIS

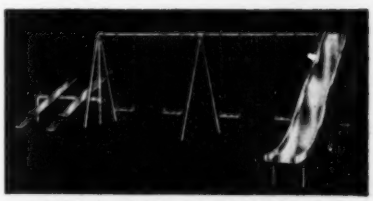
NEW YORK • LOS ANGELES • SAN FRANCISCO • CHARLOTTE, N. C. • JACKSONVILLE • DENVER

Unsurpassed in Design, Safety and Performance

The *plus* factor makes American the most respected name in playground equipment. *Plus* in design—American leads the field. *Plus* in performance—stronger, more ruggedly built for lifetime repair-free service. *Plus* in safety—American craftsmen are aware of their responsibility for safety of your children. Thus with American you get far superior design, unexcelled performance and unmatched safety.

American Streamlined Extra Heavy Duty Park Bench

All-American Picnic Grill Portable or Stationary



An American DeLuxe Combination Unit

Official Regulation One-Meter Unit

Send for Literature

AMERICAN PLAYGROUND DEVICE CO.

ANDERSON, INDIANA

WORLD'S LARGEST MANUFACTURERS OF FINE PARK, PICNIC, PLAYGROUND, SWIMMING POOL AND DRESSING ROOM EQUIPMENT

The CLEARVUE TEST DIAL

Assures Greater Accuracy in Meter Testing

For 1" and smaller circular dial meters

The Clearvue Test Dial was designed to fit ⅝" and ¾" meters. However, it is large enough to fit most 1" meters. It is not adapted to rectangular registers nor those with sweep hands in the center.

By providing a long test hand over a calibrated transparent plastic dial, the Clearvue Test Dial makes it easy to test meter accuracy at a glance to less than ½ of 1%.

Easy-operating adjustments make this the ideal test dial for series testing of meters on a test bench — one dial for each meter. Special instructions with each dial.

FREE Complete Ford catalog No. 50 of time and money saving meter equipment.

THE FORD METER BOX COMPANY, INC.
Wabash, Indiana

FOR BETTER WATER SERVICES **FORD**

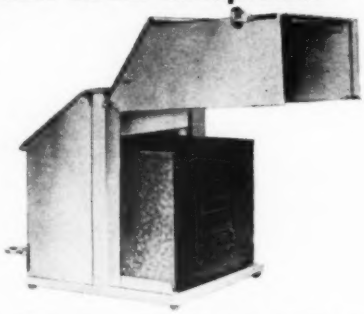
BAVIN GLASS BEAD DISPENSER

FOR STREET, HIGHWAY AND AIRPORT RUNWAY MARKING

Easily and quickly attached to ANY striping machine

G. D. BAVIN CO. 2500 WEST SIXTH STREET BUILDING LOS ANGELES 5, CALIFORNIA

New Jersey Turnpike's Rest Room Receptacles



Rest rooms on the New Jersey Turnpike are equipped with self-closing waste receptacles. They are provided, not only for convenience and to keep the premises neat, but to keep down maintenance costs as well.

The receptacles are of two types: for the men's room 34½-inch high containers, as illustrated on page 195 of the October 1952 issues of THE AMERICAN CITY, and for the ladies' rest rooms, the convenient foot-operated type shown here. Both are manufactured by The United Metal Box Co., Inc., 172 Seventh St., Brooklyn 15, N. Y.

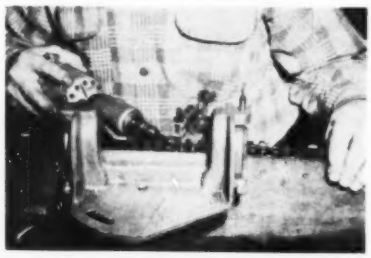
For further details, write the company, or use the post card on the colored page in this section. Circle No. 14.

Keeps Chain Saws Sharp

Meakins-McKinnon, Inc., Lockport, N. Y., announces the manufacture of its new product, Sharp-Master. This unit is a portable precision power chain saw sharpener. Sharp-Master precision-sharpens all makes of chisel tooth chains to the correct horizontal and vertical angles, cutting teeth to equal length. It does this in less than 20 minutes, according to the manufacturer.

The product is light weight, quick to set up, and easy to operate—right on a chain saw guide bar, requiring no tools. It is equipped with diamond-hard, high-speed carbide burrs, so long-lasting that they will sharpen over 100 chains. These carbide burrs can be re-sharpened, without loss of size, at just a fraction of their original cost. Sharp-Master is now available to all chain saw users.

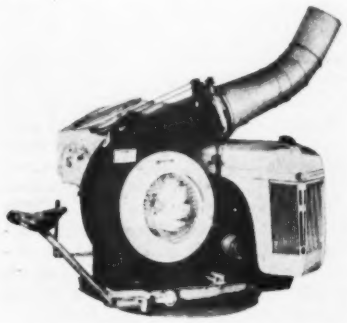
For detailed information, write the manufacturer, or use the post card on the colored page in this section. Circle No. 7.



Portable precision power chain saw sharpener is operated right on a chain saw guide bar, requiring no tools.

Hardie Co. Acquires Aero-Mist Sprayers

All sales and distribution rights for Aero-Mist concentrate sprayers have been acquired by The Hardie Mfg. Co. from the Lawrence Aero-Mist Sprayers Co., of Greenfield, Mass. Hereafter Aero-Mist sprayers will be sold and serviced by the Hardie Mfg. Co. factories and sales organizations in Hudson, Mich., Los Angeles, Calif., and Portland, Ore., and by Hardie dealers in the United States, Canada, and overseas countries.



The turret-type mount of this sprayer for insect control permits 360-degree rotation in either direction and an air outlet that also turns 360 degrees in either direction.

Aero-Mist concentrate sprayers are widely used, especially for pest control in shade and forest trees. It is pointed out that a noted feature of the sprayer is a turret-type mount which permits 360-degree rotation in either direction and an air outlet also turns 360 degrees in either direction.

The Aero-Mist is equipped with a Hardie high-pressure pump which completely atomizes the spray material, assuring uniform, complete coverage. Thorough mixing of the spray material is assured by a Hardie propeller-type agitator.

Two sizes of the Hardie Aero-Mist Sprayer meet every requirement for pest control in tall trees of all kinds. Model L80 delivers 8,000 cubic feet of air per minute at 150 mph through a 10-inch air outlet. Model L40 delivers 4,000 cubic feet of air per minute at 150 mph through an 8-inch outlet. L80 weighs 1,500 pounds. Weighing 700 pounds, Model L40 can be readily transported on pick-up truck or trailer, giving it practically unlimited mobility.

Further information may be obtained from the company, or use the post card on the colored page in this section. Circle No. 17.

Fire and Police Lights

Police and fire lights designed and manufactured by Arguslite Co., Blue Ridge Summit, Pa., include the genuine fresnel light which provides brilliant, penetrating 360 degrees of red light for all-around fire truck protection. Ball and socket bracket permits four different mounting positions on vertical or horizontal hand rails. Mounted on the horizontal rail, it will clear ladders and hose.

The 300-watt, 110-volt Floodmaster light has Hubbel twist lock male connector in the base, Mogul 300-watt floodlight with heavy wire guard, and weighs only six pounds.

The Mascot FM operates from Burgess 4F5H battery. Among it's features are polished aluminum shell, 6-inch silver-plated parabolic reflector, shatterproof Plexiglas lens, and cast aluminum finger grip to prevent slipping from wet hands and gloves. The TL, traffic light, stops traffic, has red fresnel lens, flashes a 360-foot beam 60 to 80 times per minute, and is available with flasher, switch, and chain.

The hose light serves a dual purpose —its powerful sealed beam spotlight (front) is necessary when a light truck is not available—red warning blinker light (rear) for safety insurance. TWP provides two-way protection for police cars, fire chief's cars, trucks, plows, and school buses. Warning lights flash every second with a colored light that shows 800 feet ahead, and is employed by police and fire departments. Speedy slip-on lens quickly converts any six-inch spotlight or handlight into a warning signal.

For further information, write the company, or use the post card on the colored page in this section. Circle No. 28.

Nite-Bright

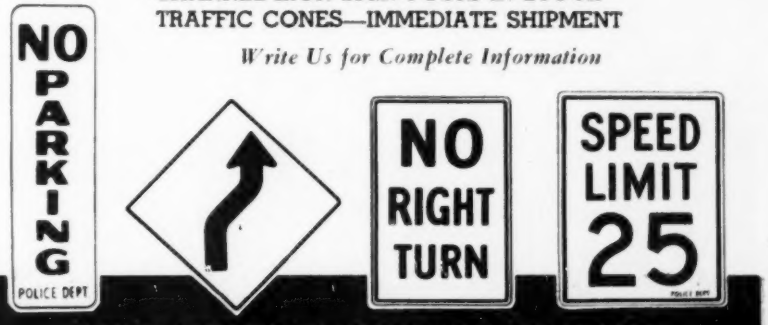
HIGHWAY SIGNS

"BRIGHT BY DAY — BRILLIANT BY NIGHT"

Sport Hill Entrance (Route 59) to Merritt Parkway, Fairfield, Conn.

FOR THE BEST IN TRAFFIC SIGNS (heavy type)
ALUMINUM SIGNS REFLECTORIZED WITH SCOTCHLITE
EMBOSSED STEEL BAKED ENAMEL SIGNS
CHANNEL IRON SIGN POSTS IN STOCK
TRAFFIC CONES—IMMEDIATE SHIPMENT

Write Us for Complete Information



NITE-BRIGHT SIGN COMPANY
140 JAMES STREET, BRIDGEPORT 4, CONN.

STREET LIGHTING GOES MODERN!

WITH AMPLEX MERCURY VAPOR LAMPS

Mercury Vapor Lamps planned for N.Y. City Belt Parkway

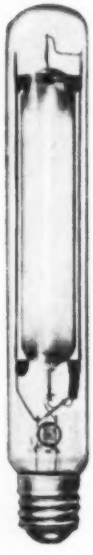
MERCURY VAPOR LIGHTS ON VALLEY HIGHWAY, DENVER

Mercury Vapor for Seattle Tunnel

HERE'S BIG NEWS for municipalities and utilities! The new Amplex Mercury Vapor Lamps for street lighting will provide vastly improved illumination... and slash costs at the same time!

Compared with incandescents, Amplex Mercury Vapor Lamps give about twice the light for the same wattage consumed... practically double the illumination without boosting the lighting bill!

Besides that, Amplex Mercury Vapor Lamps have several times the burning life of ordinary lamps... afford extraordinary lighting efficiency plus economies never obtainable before.



400W
AH-1
Approx. Lumens
16,000
Average Life
4,000 hours

400W
EH-1
Approx. Lumens
20,000
Average Life
4,000 hours

Note the actual performance facts shown here with the illustrations of Amplex Mercury Vapor Lamps AH-1 and EH-1. And then get the full story on these "lamps of the future". **Just write Amplex Corporation, Dept. K-1, 111 Water St., Brooklyn 1, N.Y.**

AMPLEX

Sealed-Beam Reflector Lamps, Colorbeam Lamps, Spotlites and Floodlites, Industrial Infra-Red Heat Lamps, Vibration and Rough Service Lamps, Street Lighting Lamps, Traffic Signal Lamps, Incandescent Lamps, Fluorescent Tubes, Display Accessories.

Sludge Gas Metered With Low Permanent Head Loss

Measurement of sludge-digester gas with permanent head loss as low as one half inch of water is reported for the Type 29 Flow Meter, product of The Foxboro Co., Foxboro, Mass. Description of the meter, its installation and use are featured in a new Engineering Data Sheet, 833-111.

Since the purpose of sludge gas measurement is to evaluate digester efficiency, or, in the case of heat or power production, to totalize the amount of gas supplied by the digester, it is important to obtain an accurate, continuous measurement which sacrifices the least possible pressure.

Construction details of the Foxboro Type 29 Flow Meter keeps head loss to a minimum. High and low pressure connections from the primary device in the gas glow line are made above and beneath a stainless steel bell in the meter chamber. The pressure differential across the bell causes an attached calibrated spring to deflect, restoring equilibrium conditions in the bell and moving the pen or pointer to measure the gas flow.

Foxboro Type 29 Flow Recorder, with integrator, for the measurement of sludge-digester gas.

The meter is available in ranges of 1, 2½, 5, and 10 inches of water. It can be furnished as a recorder, indicator, or totalizer and equipped as a pneumatic transmitter for remote transmission of sludge gas measurement.

The company announces that it has acquired new factory facilities in Texas for the assembly control valves. It manufactures the Stabilflo control valve and a complete line of instruments for process measurement and control.

Convenient to the office address, 1710 N. Akard St., Dallas, the new quarters practically double the area devoted to valve assembly and warehousing and will facilitate rapid delivery and service to industries throughout the South and Southwest which have been served from the Dallas Branch for over 20 years.

For a copy of the Engineering Data Sheet, 833-11, write the manufacturer, or use the Post Card on the colored page in this section. Circle No. 36.

Peerless Pump Sales Meeting

Personnel at the Peerless Pump sales meeting are photographed above. In the front row (left to right) are: E. W. Lundy, Los Angeles; C. C. Cook, Atlanta; G. F. Twist, B. A. Tucker, and J. C. Bonsall, all of Los Angeles. In the back row (left to right) are: W. E. Griffin, Dallas; C. H. Sortor and E. H. Hansen, Fresno; S. M. Riordan, Los Angeles; F. W. McCann, New York, and C. L. Nickel and R. H. Hull of Indianapolis.

Phoenix, Ariz., was the location of a meeting attended by all district sales managers and certain administrative personnel of Peerless Pump Division, Food Machinery and Chemical Corp., Los Angeles 31, Calif. G. F. Twist, FMC vice-president and Peerless division general manager, directed the meeting. B. A. Tucker, Peerless divisional sales manager, served as chairman.

The session covered a review of 1952 accomplishments, introduction of several new types of pumps, discussion of manufacturing, sales, and distribution requirements, and phases of the company's participation in the export market.

E. A. Schuch of Aero Service Corp. Dies

Edward A. Schuch, chief engineer for Aero Service Corp., photogrammetric engineers, 236 E. Courtland St., Philadelphia 20, Pa., died on Nov. 11 at his home in Feasterville, Pa. He was 49 years old.

He began this work in 1920 with the Marine Corps in the Dominican Republic and joined Aero Service as its chief engineer in 1938. He directed the corporation's mapping of the Pennsylvania Turnpike Extensions, the New York State Throughway, the atom bomb plant at Oak Ridge, Tenn., and the hydrogen bomb plant at Aiken, S. C. He also directed an extensive mapping program for flood control in the Missouri River Valley, as well as other mapping and exploration projects in Africa, the Middle East, and South America.

Among photogrammetrists, Mr. Schuch was well known for his pioneering work in setting up the Brock equipment, first American - designed mapping equipment on a production line basis for the compilation of accurate aerial topographic maps. He also designed some photogrammetric equipment himself and held patents on certain photo-mosaicing methods.

Mr. Schuch was a founder and charter member of the American Society of Photogrammetry, formerly head of the Division of Cartography, U. S. Soil conservation Service, and held membership in the American Congress on Surveying and Mapping, and the American Institute of Mining and Metallurgical Engineers.

Hummel Board Chairman Of Portland Cement

R. A. Hummel, chairman of the Lone Star Cement Corp., New York, was elected chairman of the board of directors of the Portland Cement Association, 33 W. Grand Ave., Chicago 10, Ill., at its annual meeting in November. He succeeds Smith W. Storey, president of the General Portland Cement Co. and the Consolidated Cement Corp. of Chicago, who was board chairman of the association for the past two years.

Elected as new directors were: R. D. Raff, president, Diamond Portland Cement Co., Middle Branch, Ohio; Ellery Sedgwick, Jr., president, Medusa Portland Cement Co., Cleveland, Ohio; Charles E. Shearer, president, Keystone Portland Cement Co., Philadelphia, and George E. Warren, president, Southwestern Portland Cement Co., Los Angeles.

TAPAX
The Original Manhole Cushion

Takes the BANG out of manhole covers

INSTALLING TAPAX—a matter of minutes

Brush Away Dirt & Gravel

Cut Required Length

Place Tapax sticky side down

Replace Cover

Write for Bulletin No. 10

JOSEPH G. POLLARD CO., Inc.
Pipe Line Equipment
NEW HYDE PARK, NEW YORK

No. 3X

Frame length 37¼"
Frame width 15"
Capacity ¾" to 2" Pipe

A ONE MAN MACHINE

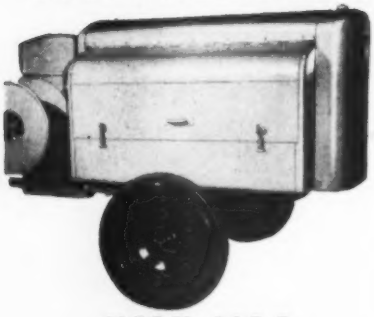
Push Pipe
Summer & Winter
Push Pipe

WRITE FOR NEW CATALOG SHOWING COMPLETE LINE OF PIPE PUSHERS AND PRICES.

GIANT MANUFACTURING CO., COUNCIL BLUFFS, IOWA

GET YOUR COMPRESSED AIR FOR LESS with

smith COMPRESSORS



MODEL 105-P

POWERED BY CHRYSLER INDUSTRIAL ENGINE

You *can* reduce costs today, by using a Smith 105-P for the *majority* of your compressor work! Delivers 105 cu. ft. per minute — combines heavy duty with light weight; easily portable. Chrysler Ind. 15 Engine has 6 cyl., 4" bore, 5" stroke, 377 cu. in., 3" crankshaft, 7 main bearings, sodium cooled valves and Stellite valve seats for heavy duty, long life. Compressor valves — stainless steel disc type with Manganese Bronze seats. Improved type pilot valve and simplified control.

SEND COUPON FOR LITERATURE & PRICES

GORDON SMITH & COMPANY
425 College Street
Bowling Green, Ky.

Send complete literature and prices on the low-cost 105-P Smith Compressor.

NAME_____

ADDRESS_____

CITY_____ STATE_____

☐ Also send name of nearest dealer.

Rubber-tired D Tournapull travels anywhere . . . over paved streets . . . up curbs . . . or cross-country. Rig can turn completely around in 12'9" radius.

Self-powered moves at 28 m.p.h. save time on Albuquerque street work

When engineers prepared plans for paving streets in Bel-Air subdivision, Albuquerque, N. M., they found 30 intersections with poor drainage. To handle new grading efficiently and at low cost, the city called on a 28 m.p.h., 7-yard D Tournapull. Each morning, the "D" was driven from department garage through city traffic to the subdivision. Here, it self-loaded sand, gravel and topsoil to cut each intersection down to grade. Material, hauled 1 to 6 blocks, was used to fill in low spots. After one intersection was graded, the "D" immediately drove to the next and, in a few minutes, was again moving dirt.

Bringing intersection to grade, Bernalillo County's "D" self-loads in sand and gravel. "I like the ease of operation and the speed of this D Roadster," says Operator Pete Padilla. "It takes all the work out of my job."

"We didn't lose any time transporting our Tournapull," reports Supervisor Daniel Herrera. The "D" made all moves under its own power at speeds up to 28 m.p.h. Waiting delays, loading, blocking were completely eliminated. Rig drove over pavement and across railroad tracks without damage.

Ability to drive job-to-job under its own power is only one of the reasons you'll get faster service and reduced costs with a D Tournapull. The "D" also self-loads in most scraper dirt . . . needs no pusher or other help to handle small-yardage, maintenance-type jobs. Rig's high speeds make long hauls economical . . . its speed and short 12' 9" turn radius enable it to outproduce much larger, more expensive crawler-scrapers even on short hauls. In snow country it's a big help in clearing streets of ice and snow.

But see for yourself! Just drop us a line . . . we'll be glad to show you one of these high-speed "handymen" in action. Or, we can put you in touch with present D Tournapull owners so you can make your own check.

R.G. LeTOURNEAU, INC.
Peoria, Illinois

Tournapull—Trademark Reg. U.S. Pat. Off. DP-44-P-zz

Union Metal Plant At Brampton, Ontario

With construction of a new plant at Brampton, Ontario, well underway, officials of the parent company. The Union Metal Mfg. Co., Canton 5, Ohio, anticipates that initial production will begin shortly.

This initial production is to consist of parking meters for the firm's Dual Parking Meter Division, and will be followed by production of switch boxes, meter enclosures, and similar products of the company's Superior Switchboard and Devices Division.

The new plant will be known as The Union Metal Mfg. Co. of Canada, Ltd. V. J. Lajeunesse of Canton, Ohio, has been named president, and O. L. Beatty, Preston, Ontario, Canada, general manager of the new Brampton plant, according to C. A. Streb, president of Union Metal.

New 18-Inch Rotary Mower

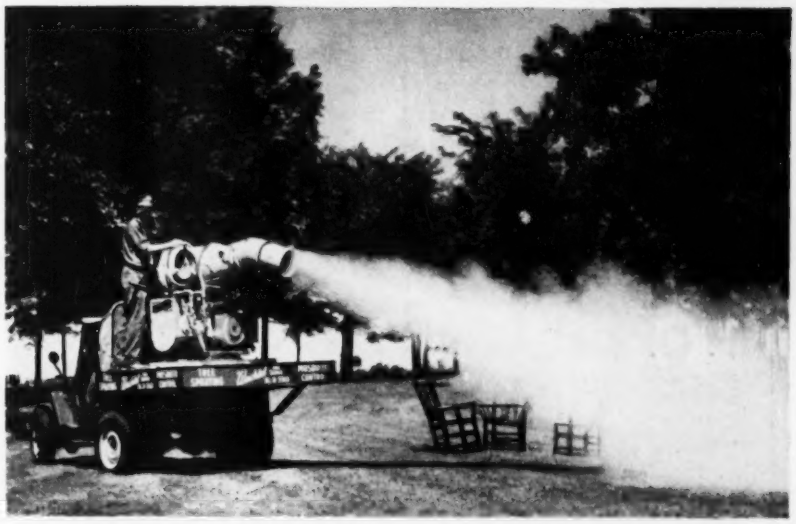
Over-all sturdiness and balance together with several new design features are incorporated in the new Jacobsen 18-inch rotary mower, recently introduced.

The cutter bar is pitched to provide suction lift. It is driven through special friction plates which absorb impact and prevent shock damage to engine and cutting unit. The two cutter blades are hardened, double-edged sections which are solidly fastened to prevent turning. These sections are reversible for longer wear and are easily replaced.

Cutter bar of 18-inch rotary mower is pitched to provide suction lift.

The handle is of streamlined tubular design with comfortable rubber grips. It may be placed in vertical position for convenient storage, and is free-floating to absorb ground jolts, or may be quickly locked in place with a special catch so that mower may be tilted.

Further information is available from the Jacobsen Mfg. Co., Racine, Wis., or use the post card on the colored page in this section. Circle No. 23.



Iron Age Model 40 Mist Sprayer: *10 hp, 2 cyl. Onan engine. 87% efficient Hartzell fan delivers 6500 cu. ft. air per minute at 90-100 mph. Handles water and all mixes. Turret rotates 360°—direction of air blast fully controlled. Lightweight for mounting on jeep, small truck or boat. 40 gallon tank.*

CONTROL flies, mosquitoes, pests with

IRON AGE MIST SPRAYER

SEE that terrific blast of misted concentrate? There's 6500 cubic feet of it being delivered every minute . . . at 90 to 100 mph . . . saturating every tree, bush and blade of grass to spell instant death to harmful insects! Complete misting of concentrate, either in oil or water, is attained by injecting exactly the right amount of mix through highly efficient spray jets directly into the center of a high velocity air stream! Spray jets can be changed quickly to alter droplet size. Easily reaches tops of 90-foot trees and does not defoliate at close range. Light weight permits easy mounting on jeep, small truck or boat.

For complete information on IRON AGE Mist Sprayers, fill out and mail coupon below.

IRON AGE MIST SPRAYER
Gives You These Advantages:

- *Greater community health and comfort*
- *Superior control of tree pests, flies and mosquitoes*
- *More efficient use of power, materials, labor and equipment*

MAIL THIS COUPON FOR COMPLETE INFORMATION

OLIVER
IRON AGE
Finest in Farm Machinery

THE OLIVER CORP., Dept. 36
400 W. Madison St., Chicago 6, Illinois

Please send me information on Iron Age Mist Sprayers.

Name .....
Title .....
Address .....
City .....
State .....

Burn City Refuse for only 39c per ton???

Yes . . . .

City of Santa Monica, California with a new

CUSTOM-BUILT

F. O. DeCARIE INCINERATOR

burning 125 tons of refuse daily . . . 40% raw garbage, reduced its refuse to an odorless ash for 39c per ton.

Write today for details to:

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GREELIS SALES DIV.
F. O. DeCARIE

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CONCRETE MAINTENANCE AND REPAIR

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- BRIDGE PIERS
- SEWAGE AND WATER TREATMENT PLANTS
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FOUNDATION STABILIZATION

- BRIDGE PIERS
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- CAST-IN-PLACE PILES
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Prepakt Concrete provides exceptional bond to old concrete and extreme resistance to weathering.

Offices in Principal Cities or write . . .

INTRUSION-PREPAKT, INC.

Union Commerce Bldg. • Cleveland 14, O.

Combination Loader And Dozer-Crane

It loads . . . . . .

It dozes . . . . . .

And it can work like a crane.

A new cost-cutting combination for loading and dozing has been announced by The Oliver Corp., 400 W. Madison St., Chicago 6, Ill. An Oliver Industrial wheel tractor with Strait-line loader is a unit that digs at either end, swings its load overhead, and loads in front. According to the manufacturer, the rear-carried bucket load multiplies traction and makes steering easier. The straight-line operation saves valuable time in loading operations.

With the bulldozer angledozer blade mounted on the Start-Line, all that is necessary is to push a lever and the tractor is ready for dozing, carrying a loaded bucket in the rear gives added traction and makes wheel tractor dozing very effective.

As an added feature, the loader bucket may be removed from the Strait-Line unit and replaced with a crane which can operate at either end of the tractor. This unit is then ideal for handling pipe poles and heavy machinery. The crane's ability to function at the rear is important where soft footing is encountered. It makes steering easier and allows use of the unit under conditions where a load in front would make operation impossible.

For further information, write the company, or use the post card on the colored page in this section. Circle No. 29.

Stainless Steel Coating On Pipe Repair Clamps

Adams Pipe Repair Products, Inc., announces that the malleable iron castings in its line of Stauffer pipe repair clamps are now furnished with two coats of powdered stainless steel in plastic suspension. This feature provides much greater protection against corrosion. These clamps also have stainless steel bands which assure longer life.

Stauffer pipe repair clamps are said to provide a positive, permanent repair for leaks, blowouts, and short splits in all types of pipe — standard steel, cast iron, asbestos cement, and others.

One of the outstanding features claimed for Stauffer clamps is the exclusive slotted lug which enables the user to simply drop bolt through a slot and tighten. There are no nuts to start and no fishing of bolts through holes. This feature is said to make installation under water especially easy.

Stauffer pipe repair clamps are available for pipe sizes from ½ to 24 inches in standard widths of 3, 6, 9, and 12 inches. Width up to 36 inches may be obtained on special order.

Bulletin-452-G giving complete information may be had by writing Adams Pipe Repair Products, P. O. Box 21, El Monte, Calif., or by using the post card on the colored insert page in this section. Circle No. 31.

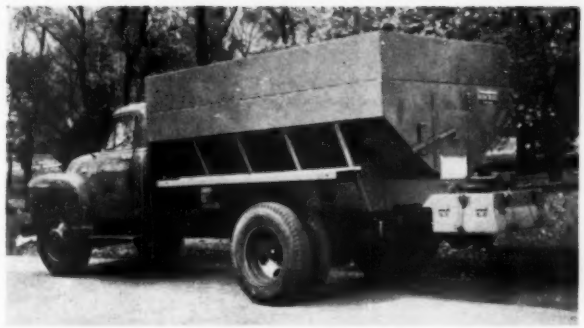
American Vacuum Leaf Loader

Solves your leaf or clean-up problem

Write for leaflet

LEAF LOADER DIVISION

American Structural Steel and Tank Co.
21050 W. 8 MILE ROAD DETROIT 19, MICH.



New cinder spreader distributes full-road or half-road width at one pass.

New Cinder Spreader

A new cinder spreader specifically designed to save time, money, and manpower in combatting ice and snow on roads, streets, highways, airports, and plant grounds, is the latest addition to the line of truck-mounted spreaders manufactured by Hercules Steel Products Corp., Galion, Ohio.

The Hercules Cinder Spreader distributes full-road or half-road width at one pass and is controlled from the cab by a single-driver-operator. It may also be controlled manually.

New precision-controlled baffles, quickly and easily adjusted to any spread pattern, keep cinders from scattering and hitting parked cars or other vehicles. Bolt-on type deflector plates permit easy, economical replacement of worn and abrasive-cut baffles.

The Hercules Cinder Spreader conveyor and spinner mechanisms are powered by a regular truck-transmission type power take-off, through a protected drive line and universal joint arrangement. A heavy-duty gear-reduction box completes the basic speed to power changeover. A new pre-heater uses the truck engine's exhaust heat to prevent large chunks of moist or wet cinders from forming next to the body conveyor chain. This automatically eliminates load hangup due to freezing conditions, and assures a uniform spread of small even-sized cinders.

For literature, write the company, or use the post card on the colored page in this section. Circle No. 12.

Automotive Pioneers Laud W. F. Rockwell

The Automobile Old Timers Association presented a Distinguished Service Citation to Colonel Willard F. Rockwell at the 13th annual dinner on Nov. 13th at the Hotel Astor, New York City. J. Saxton Lloyd, president of the National Automobile Dealers Association, and Arthur Godfrey, radio and television star, were guests of honor. Mr. Lloyd was the principal speaker

The Automobile Old Timers, a national organization, is composed of those who have been actively identified with the pioneering developments of the automobile industry and the associated parts and accessory manufacturing.

Colonel Rockwell is chairman of the board of Rockwell Mfg. Co., Pittsburgh 8, Pa., and of Timken-Detroit Axle Co., and Standard Steel Spring Co. He is president of the Western Pennsylvania Chapter of the automobile association.

His citation stated in part that he was receiving "recognition for his long association with the automotive industry and his distinctive services to our country in two World Wars." It cites his contributions to the world's mechanized transportation as inventor, organizer and director, for honors awarded him by our Allies in World War I for his improvement of military motorized transport, for his contributions as Director of Production for the Maritime Commission during World War II, and for his services with the Army and Navy Munitions Board and the War Production Board.

Colonel Rockwell has also been honored for his contributions in other activities, which included public utilities, petroleum industry, banking, foreign trade, research, invention, and government service.

Geerpres Wringers (a size and type to fit every need) are acknowledged to represent the biggest recent innovation in mopping equipment. Water is squeezed easily and uniformly from the mop—*without splash.* No twisting or pulling to injure mops. Built for long heavy-duty service. Fully guaranteed. Ask today for Catalog 2950-AC showing complete Geerpres floor cleaning equipment.

GEERPRES WRINGER, INC.
P. O. Box 658 . . . Muskegon, Michigan

Full power behind both drills with Jaeger air-plus pressure

75 ft.
125 ft.
185 ft.
250 ft.
365 ft.
600 ft.

By using a "new standard" Jaeger 365 compressor instead of a 315 on this by-pass bridge approach at Shelton, Connecticut, Mariani Construction Co. was able to hold a 4" wagon drill at top efficiency, averaging 300' per day in shale, *and operate a hand-held drill at the same time.* All Jaeger sizes offer like advantages—more air per dollar, more production per hour.

THE JAEGER MACHINE COMPANY **505 Dublin Avenue Columbus 16, Ohio**

PUMPS • MIXERS • TRUCK MIXERS • PAVING SPREADERS and FINISHERS

G. E.'s Advertising Manager in Southeast

James L. Townsend has been named manager of advertising and sales promotion of the General Electric Co.'s Southeastern Apparatus District, it was announced by C. L. Redd, district manager. He will make his headquarters in Atlanta.

The district includes all of the states of South Carolina, Georgia, Florida, and Alabama; major portions of North Carolina, Tennessee, Mississippi, and Louisiana, and a small part of Virginia.

Mr. Townsend joined G. E. in 1925 and held various positions before his present appointment.

Syntron Co. Expands

The Syntron St. Louis Sales Co., which represents and sells Syntron vibratory material handling equipment, power tools, selenium rectifiers, paper joggers, and shaft seals in the St. Louis, Mo., area, announces the opening of a new store at 4431 Manchester Ave., St. Louis 10.

Available as a service to contractors, maintenance men, and homeowners will be the rental and sale of electric hammers, gas-hammer paving breakers and rock drills, portable electric saws and drills, and concrete vibrators.

The main office of Syntron is in Homer City, Pa.

Dr. Steinman Heads Academy of Sciences

Dr. D. B. Steinman, internationally eminent bridge engineer and scientist, of 117 Liberty St., New York 6, N. Y., was unanimously elected president of the New York Academy of Sciences at the annual dinner on December 4. He succeeds Dr. George B. Pegram, distinguished scientist and Dean of the Graduate Faculties of Columbia University.

Dr. D. B. Steinman

Dr. Steinman is a Life Fellow of the academy and was one of the founders of its Section on Mathematics and Engineering. He has designed and built over 300 bridges on five continents, and six of his bridges have been honored in the Annual Artistic Bridge awards for the most beautiful bridges in America.

Author of well-known books on bridge engineering as well as scientific, mathematical, and technical papers, and publications, he has twice received the Norman Medal, highest award of the American Society of Civil Engineers. For his scientific and professional contributions and achievements, he has received numerous honors and awards from engineering and scientific bodies in this country and abroad, and a number of decorations and honors from foreign countries.

Dr. Steinman is a past president of the National Society of Professional Engineers, National Council of State Boards of Engineering Examiners, U. S. Council of International Association f Bridge and Structural Engineering, American Association of Engineers, Structural Division of American Society of Civil Engineers, American Bridge, Tunnel and Turnpike Association, New York State Society of Professional Engineers, Metropolitan Section of American Society of Civil Engineers, and other professional organizations.

Joy Equipment Dealer

Joy Mfg. Co., Henry W. Oliver Building, Pittsburgh 22, Pa., has appointed Southern Gateway Co. as distributor of Joy construction equipment for the Southwestern portion of the State of Ohio.

With headquarters at 2200 Losantiville Road, Cincinnati, Ohio, Southern Gateway will represent the entire construction line, which includes air compressors, wagon drills, hand-held drills, paving breakers, spaders, tampers, and portable hoists.

Joy also has appointed Highway Machinery & Supply Co., distributor of equipment for a major portion of Virginia. With headquarters at 1724 Altamont Ave., Richmond, Highway Machinery maintains branch sales and service facilities at 425 W. Fourth St., Salem, Va.

Made-up Mechanical Joint cut away to show its design.

Standard compression type fire hydrant made in full compliance with latest AWWA Specifications. Available in Standard model or Traffic model. Main valve opens against the pressure. Valve will remain closed in case hydrant is broken off in traffic accident. Features include low friction loss, high efficiency, revolving head, dry top, easy lubrication.

Hydrant shoe has two heavy lugs for use in strapping hydrant to pipe line. The end connection is Standardized Mechanical Joint in accordance with specifications of Cast Iron Pipe Research Association. A thick gasket is compressed by a bolted follower ring. Advantages include easy assembly, low joint cost; deflection, expansion and contraction without leakage. For complete information, write or wire M & H VALVE AND FITTINGS COMPANY, Anniston, Alabama.

M&H PRODUCT FOR WATER WORKS • FILTER PLANTS INDUSTRY • SEWAGE DISPOSAL AND FIRE PROTECTION

Mud-Jack Inventor Heads Koehring Engineering

The appointment of John W. Poulter as chief engineer for the Koehring Co., Milwaukee, 16, Wis., is reported by Julien R. Steelman, president of the firm which makes heavy-duty construction equipment.

J. W. Poulter

With Koehring since 1931, Mr. Poulter is well known for his invention and development of the mud-jack, a machine designed to provide an inexpensive method of stabilizing subgrades under concrete slabs. Before joining the firm, he was with the Iowa State Highway Commission.

In his new post, Mr. Poulter succeeds E. O. Martinson, who, earlier this year, was named vice-president in charge of engineering for Koehring and its subsidiaries, Kwik-Mix Co., Port Washington, Wis.; Parsons Co., Newton, Iowa, and the C. S. Johnson Co., Champaign, Ill.

Colorado Fuel and Iron Buys Roebling's Sons Co.

Charles Allen, Jr., chairman of the board of The Colorado Fuel and Iron Corp., 575 Madison Ave., New York 22, N. Y., and Charles R. Tyson, president of John A. Roebling's Sons Co., Trenton 2, N. J., have announced that the Roebling business will be operated as a subsidiary of Colorado Fuel and Iron under the Roebling name. Charles R. Tyson, Roebling president since 1944, will continue to direct operations of Roebling plants.

Alwin F. Franz is president of Colorado Fuel and Iron.

International Harvester Acquires Hough Company

John L. McCaffrey, president of International Harvester Co., Chicago 1, Ill., announces that the firm has acquired the stock of the Frank G. Hough Co. of Libertyville, Ill., manufacturer of earth-moving, excavating, and material-handling equipment. The Hough Co. has become a wholly owned subsidiary of International Harvester.

Mr. McCaffrey reports that the Hough Co.'s products, including its Payloaders, will supplement International Harvester's current line of industrial power and earth-moving equipment.

Frank G. Hough will continue as president of the subsidiary company. Hough products include machines for digging, carrying, dumping, and unloading earth or other materials, as well as tractor-type prime movers, and bulldozer shovels for use with crawler-type tractors.

IN *ONE* MINUTE . . .

loaded by *Athey* Hi Loader

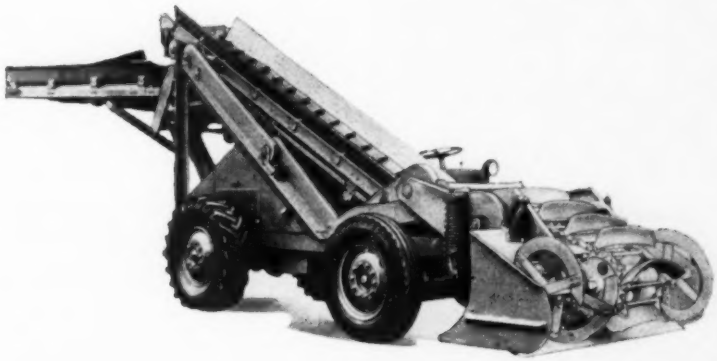
Sand, snow, stone or soil—whatever material you move will get the fastest handling you've ever seen with an Athey 125 Hi Loader!

This versatile rig — built with a ruggedness that assures trouble-free service — digs in at speeds up to 2 MPH. Hi-Carbon Steel feeder blades — fed by augers that reach out four feet from center — paddle the material onto the heavy-duty cleated conveyor belt. Feeder blades and augers float freely to ride up and over piles — eliminating slow-downs caused by jamming, crushing, bulldozing.

Material moves up the conveyor and onto the discharge conveyor that is hydraulically controlled to swing to either side. Height of discharge is adjustable to fit hauling units of *any* size. The Hi Loader moves from job to job at speeds up to 20 MPH.

Here is the portable loader . . . a conveyor . . . material handler that can speed your operations and cut your costs. It's backed by your Athey-Caterpillar Dealer who can give you all the profitable facts. Call on him today!

ATHEY PRODUCTS CORPORATION, 5631 West 65th Street, Chicago 38, Illinois



Athey
Hi Loader

Athey Products Corporation, Dept. AC-1
5631 West 65th Street
Chicago 38, Illinois

Please rush me more information on the fast-loading Athey Hi Loader. I am in the _____ business.

NAME _____

ADDRESS _____

CITY _____ STATE _____

MAIL THIS COUPON — TODAY!

HI-WAY *Spreader*

Which one does Your City need?

MODEL E
HIGHWAY SPREADER

Here without doubt is the most VERSATILE spreader that can be purchased today—always on the job giving trouble-free, economical service on any type of spreading 365 days of the year. It is self-unloading, power take-off driven, well constructed and thoroughly dependable.

The conveyor of the ***Model E*** has an overall width of 24 inches, and is equipped with a heavy-duty all-steel roller chain. An adjustable baffle plate guard prevents material waste by permitting complete control of the spreader on either two or four-lane highways. The adjustable feed gate can be controlled by a lever from within the cab. The swinging end gate can be completely detached. Cab controlled clutch is optional—available in either enclosed or open type. Heavy steel ribs add strength and reinforcement.

MODEL W
HIGHWAY SPREAD-ALL

This Model, recently developed, has gone through many tests in the past year. We recommend it as by far the most successful spreader of its type on the market. It is available in different sizes to fit all different lengths of trucks.

The entire mechanism can be driven from the auxiliary gasoline engine, or from the power take-off on the truck, or through a V-belt drive on the drive shaft of the truck. The clutches are controlled from within the cab by either vacuum or air controls, and the feedgate adjusting the amount of material to be spread is controlled from the cab of the truck, thus making this a one-man unit. Note the streamlined appearance.

MODEL DD
TAILGATE SPREADER

Here is the economical ***all-purpose, all-weather*** Spreader—used in the summer for dust control and for seal coating, and in the winter for spreading sand, cinders or rock salt on icy pavements.

Model DD fits any standard dump truck body and can be attached or detached in one minute. It gives a uniform spread 4 to 60 feet wide, at 1 to 35 miles per hour. ***Model DD*** will give you years of economical, trouble-free service.

MODEL R
HIGHWAY SPREADER

This Spreader solves your problem of seal coating. It spreads forward or reverse with control of material flow—has an adjustable width of spread—handles all types of aggregate from fine sand to crushed stone. With worldwide acceptance, ***Model R*** is your ace performer. All ***Model R*** Spreaders are equipped with a swivel type self-adjustable hitch which can be raised or lowered by the crank on the left side of the Spreader.

Sold by leading distributors throughout the United States & Foreign countries

Consult your local dealer—or write for circulars

HIGHWAY EQUIPMENT COMPANY, INC. CEDAR RAPIDS, IOWA, U. S. A.
MANUFACTURERS OF THE WORLD'S MOST COMPLETE LINE OF SPREADERS

Named Chief Engineer Of Refinite Corporation

The appointment of Eugene Schmidt to the position of chief engineer of the Refinite Corp., Refinite Building, Omaha, Nebr., is reported by C. A. Spaulding, Jr., vice-president and general manager of the company.

E. Schmidt

Mr. Schmidt spent 15 years with the Dorr Co. designing and installing all types of sewage and water conditioning equipment, and has been associated with Liquid Conditioning Corp., Allied Steel Products Corp., a fabricator of water conditioning equipment, and the General Filter Co.

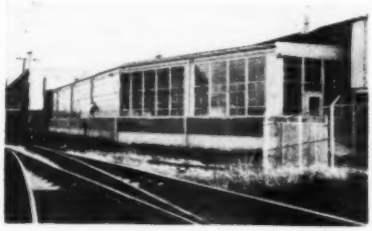
Baker Manufacturing Co. Increases Production

Marked production increases have resulted from the completed first phase of The Baker Mfg. Co's. expansion program at Springfield, Ill. Baker bulldozers, gradebuilders, and other earthmoving equipment shipped in October established a new record—a record that will by the end of 1953 double Baker's production as more new facilities and new production methods are accomplished.

W. C. Staley, president of Baker, points out "The long-term plans call for a continued expansion program designed to keep production of Baker units in line with the peak production requirements of the Allis-Chalmers Springfield Works."

Phase one of the program involved improved internal manufacturing methods to increase production by more efficiently utilizing existing plant capacity and machinery. One new building fitted with the latest type of equipment was completed in September.

Phase two, now in progress, will see completion of larger facilities for the engineering department, enlargement of office space, and further development of assembly line techniques.



New Hydraulic Department building above was completed in September by The Baker Mfg. Co., as part of its current expansion program costing half a million dollars. Baker designs and builds bulldozers and grade builders for Allis-Chalmers crawler-tractors.

Neptune Meter Director And Vice-President

Election of Wentworth Smith as director and vice-president in charge of sales of Neptune Meter Co., 50 W. 50th St., New York 20, N. Y., is announced by John H. Ballantine, chairman of the board. Mr. Smith fills the vacancy left by the recent retirement of Rex J. Van Gorder after 33 years of service with Neptune.

Wentworth Smith

Mr. Smith joined Neptune in 1949 and spent several years in special marketing studies for the New York firm. He was appointed assistant general sales manager in 1950, and in 1951 was promoted to general sales manager.

Before joining Neptune, he was with the sales staff of Safety Car Heating and Lighting Co.

Neptune Meter manufactures Trident water meters, Red Seal petroleum meters, and liquid meters for food, chemical, and general industrial use.

Hammond Iron Works Buys Keyes Tank Co.

Hammond Iron Works of Warren, Pa., announces the acquisition of Keyes Tank Co. of Provo, Utah, and Keyes Tank & Supply Co. of Casper, Wyo., which for the past several years have been licensed to fabricate and sell Hammond designs of conservation storage tanks in the Rocky Mountain area.

Present Keyes management and personnel will be retained and operations will be conducted as the Keyes Tank Division of Hammond Iron Works. Lester Johnson, with headquarters at Casper, is manager of the Keyes Tank Division and the Provo plant is under the supervision of Donald Newell.

In addition to the general line of Hammond floating roof tanks and the field-erected conservation types, Keyes will continue to fabricate a general line of steel plate construction, including underground tanks, steel reservoirs, mud tanks for rotary drilling, and production field tanks.

Oil Booster for Low-Cost Heating

The new Peak-Temp Oil Booster is announced by the Road Machinery Division of Cleaver-Brooks Co., 326 E. Keefe Ave., Milwaukee 12, Wis., manufacturer of equipment for generation and utilization of heat.

According to the company, the new product provides quicker heating, lower operating cost, quicker shutdown, and trouble-free design, and additional storage space. It eliminates water, steam, or pressure problems, and is engineered and designed to operate with heat transfer oils up to and in excess of 600°F. No special pumps or fittings are required for operation at these extreme high temperatures.

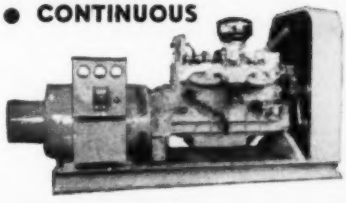
The booster is an integral unit for circulating heat transfer oil through coils and tracer lines, in place of steam. It consists of heating shell rigidly mounted on a channel iron frame, separate heating element for insertion into shell, electric motor for driving blower and fuel oil pump, and separate motor driving the heat transfer oil pump. Unit is preassembled for immediate mounting on floor or simple foundation and ready for attachment of fuel, electrical, and vent connections.

The company's Bulletin AD-108 describes the Peak-Temp Oil Booster, which is available in two sizes, Series 1200 and Series 1800. For copy, write firm or use post card on colored page in this section. Circle No. 15.

New oil booster for fast, low-cost heating of oils, bituminous, and heavy viscous materials in storage tanks, bulk plants, and refineries.

POWER!

- PORTABLE
- STANDBY
- CONTINUOUS



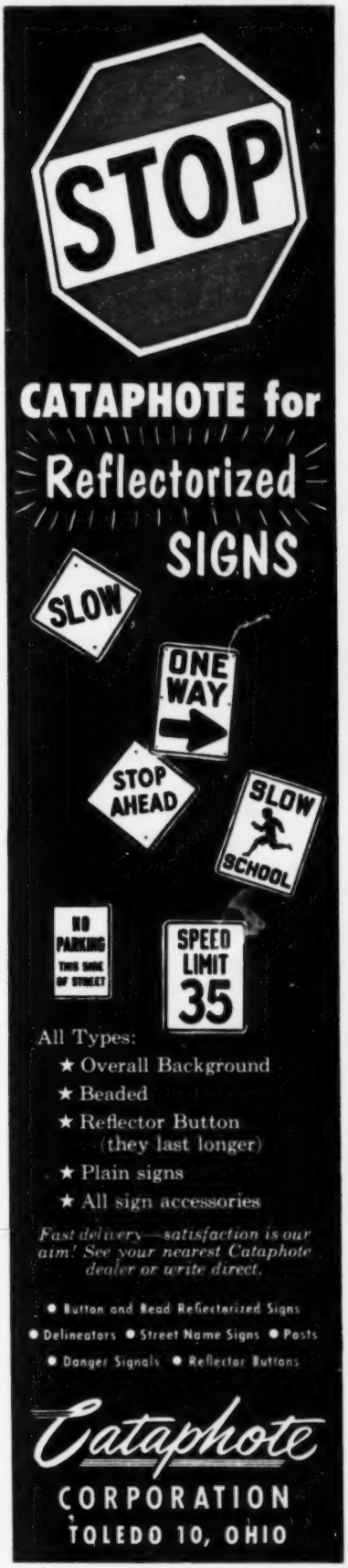
KATOlight

GENERATORS—POWER PLANTS

There is a KATOLIGHT Generating Unit to serve your municipal department's particular needs. Continuous Duty or Standby plants available. Many models, your choice of air or water cooled gasoline engines of well known manufacturers. Up to 47 KVA. Backed by over 23 years' experience. Also Motor Generator Sets, High Frequency Generators, Converters, Frequency Changers and Independent Generators up to 300 KW.

Write Regarding Your Requirements

KATOLIGHT CORPORATION
Box 491-25 Mankato, Minnesota



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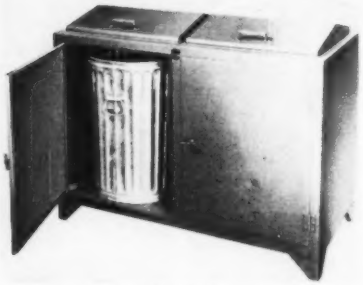
Waste Receptacles



Bennett Bilt self-closing waste receptacles have non-rusting, stainless steel feet. According to the manufacturer, they are sanitary, easy to use and to empty, save time, and are built to take hard, everyday use.

Non-rusting stainless steel feet eliminate corrosion and rust marks. Positive closing doors repel insects, rodents, and also reduce fire hazard. The receptacles are available with removable galvanized liners. Liners or bags can be purchased separately. The welded construction and soldered seams make these galvanized liners watertight, rustproof, and sanitary.

Among the places these waste receptacles can be used are airports, plants, municipal buildings, parks, public buildings, institutions, schools, and on sidewalks. Available is a complete line of sizes for every purpose in green or white finish.

Literature may be obtained by writing The Bennett Mfg. Co., Alden, N. Y., or by using the post card on the colored page in this section. Circle No. 26.

Executive Engineer For Le Roi Company

Frank Kuether has been named executive engineer by Le Roi Co., Milwaukee 14, Wis., manufacturer of portable air compressors and internal combustion engines. The announcement was made by Paul W. Eells, vice-president of the concern.

He will report directly to Wayne Grieve, chief engineer, and will be responsible for the actual operation of all departments and sections of Le Roi's Engineering Division.

Mr. Kuether joined the firm in 1926 when Le Roi purchased the Beaver Motor Corp. Since then, he has been chief draftsman and assistant chief engineer.

The company has integrated its plant and industrial engineering departments under the supervision of Wesley A. Schaefer, who will be manager of the new industrial and plant engineering department. This announcement was made by Hugh M. Little, works manager.

Walter V. Sovitzky has been named chief industrial engineer in a move to combine Le Roi's industrial and plant engineering departments. Mr. Schaefer has been with Le Roi for 33 years and has been plant engineer since 1929. Mr. Sovitzky has been with Le Roi 24 years as shop foreman, methods engineer, and industrial engineer.

How to Reclaim Valuable Surface Material on Abandoned or Worn-Out Roads

You don't have to abandon thousands of tons of useful, valuable aggregate (and binder) when relocating roads. You don't have to face the time and expense of ripping up, loading and hauling away the material.

With HYSTER GRID ROLLER you can now salvage and use the old bituminous pavement—saves both time and money. Here is the procedure when old road is to be abandoned:

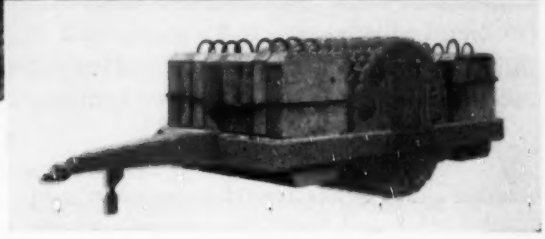
1. Scarify old surface, using motor grader or ripper.
2. Grid Roll chunks without removing from roadbed. An average of 10 passes at 5 miles per hour reduces chunks to the original, loose aggregate mixture.
3. Windrow the salvaged material and load it out with scrapers, conveyor-type loaders, or other conventional equipment.
4. Re-lay salvaged material on properly prepared new roadbed (or stockpile, if desired).
5. Add small amount of binder to salvaged material (amount required varies with condition of binder remaining in salvaged aggregate).
6. Roll new surface (composed of salvaged material) using Hyster Grid Roller.
7. Apply seal coat, if desired.

When maintaining or rebuilding worn-out roads, the procedure is the same except for point No. 3; instead, salvaged material is windrowed on shoulder and the Grid Roller is used to compact and prepare sub-base.

Ask your Caterpillar-Hyster dealer for information about the new Hyster Grid Roller, or write for catalog.

2,500 YARDS OF AGGREGATE SALVAGED ON CALIFORNIA ROAD JOB

Pictured are scenes taken on a recent road re-location job in California. Over 2,500 yards of aggregate were salvaged from the abandoned road, using the Hyster Grid Roller. The procedures outlined were used on this job. After the Grid Roller had salvaged the material, it was loaded out and removed from the old road bed, with Caterpillar DW-10 Tractors and Scrapers, stockpiled (while fill material from the old road was used to provide fill material for new road), then re-layed to form new surface.



HYSTER COMPANY

2902-61 N. E. CLACKAMAS ST.....PORTLAND 8, OREGON
1802-61 NORTH ADAMS STREET.....PEORIA 1, ILLINOIS

HOW MUCH WILL YOU SAVE WITH AERO MAPS?

Here's why your city engineer belongs in this picture

You save twice when you buy AERO maps—*first*, in lower-than-ground-surveys cost. You save *again* in the planning and engineering economies you achieve with dependable, up-to-date maps.

PHOTO MAPS FOR PLANNING: you can have complete, accurate photo-maps of your city for a few hundred to a few thousand dollars. These dependable AERO maps will provide office solutions to many planning problems—subdivision layouts, land use and storage, traffic flow, utilities distribution, locating playgrounds and freeways. Costly field trips are greatly reduced.

CONTOUR MAPS FOR ENGINEERING USES: precise AERO maps provide basic data for the city engineer's work on sewerage and drainage problems—for street re-location and laying out new streets and by-passes—and for defining catchment areas for storm sewer systems.

Precise AERO maps can be counted on for cut and fill estimates, and for all engineering problems where dependable topographic facts are required. We will deliver complete maps for your city for ½ the cost (*or less*), of ground surveys, and these costs can be budgeted over a two or three year period.

Let us show you how AERO has saved money for other cities, large and small, all over the country. Our mapping engineers bring thirty-four years' AERO experience to your project.

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SERVICE CORPORATION
PHILADELPHIA 20, PENNSYLVANIA
Oldest Flying Corporation in the World

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PRECISE AERIAL MOSAICS • TOPOGRAPHIC MAPS • COLOR PHOTOGRAPHY • RELIEF MODELS

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Water, Sewage and Industrial Waste Problems, Airfields, Refuse Incinerators & Power Plants, Industrial Building, City Planning, Laboratory, Reports, Valuations.
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Organized to assist municipalities and public groups in utility valuations, rates, franchises, accounting and surveys.
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The Consulting Engineers' section of
THE MUNICIPAL INDEX
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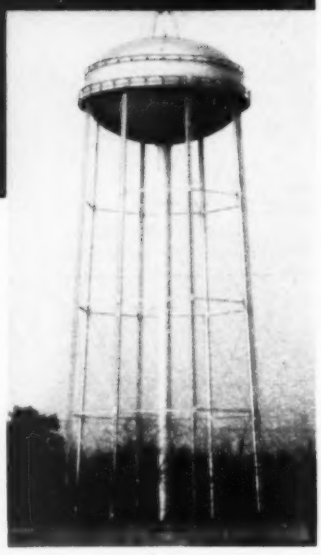

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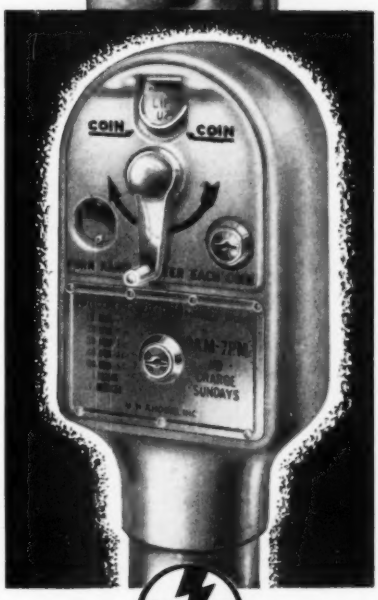

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